

**EFFECT OF TYPE OF BEHAVIOUR  
PATTERN AND MENTAL HEALTH  
ON LIFE STRESS OF NORMAL  
AND HEART PATIENTS**

*A THESIS*  
*SUBMITTED FOR THE DEGREE OF*  
**Doctor of Philosophy**  
in  
**PSYCHOLOGY**  
of  
Bundelkhand University, Jhansi



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## DECLARATION

I hereby declare that the thesis entitled "**Effects of type of behaviour pattern and mental health on life stress of normal and heart patients**" being submitted to Bundelkhand University, Jhansi for the Degree of Doctor of Philosophy in Psychology is an original piece of research work done by me and to the best of my knowledge and belief the thesis or any part of the thesis has not been published in any other University or Examining Body in India or abroad earlier.

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## CERTIFICATE

Certified that the present thesis entitled "Effects of type of behaviour pattern and mental health on life stress of normal and heart patients" by Mrs. Poonam Agrawal embodies the work carried out by her under my supervision and that this work has not been submitted elsewhere for a degree. Mrs. Poonam Agrawal has put in more than 200 days of attendance during this work.

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## Acknowledgement

The present thesis is not only schematic interpretation in the light of depth of health psychology but the effort is to present the effect of the heart patients.

I cannot close these prefatory remarks without expressing my gratitude to all those who helped me in the preparation of the present work.

The present thesis was flagged off by my learned Supervisor Dr. Awadhesh Kumar Agrawal, Head & Reader, Department of Psychology, Nehru Mahavidhyalay, Lalitpur, who is implicitly throughout the pages of the thesis and tribute for giving valuable suggestion for final preparation of the manuscript before submitting.

I am indebted to Dr. A. K. Srivastava, Reader present Head, Department of psychology, D. V. (P. G.) college Orai, who in his inimitable way enlightened me through many illuminating discussion on various psychological concepts and also provided me the facilities to carry on the present study.

I express my heart-felt thanks to Dr. Taresh Bhatia, Reader, Dept. Of psychology, D.V. (P. G.) college, Orai, who with his constant inspiration did not allow my spirit to sag and also helped me in illuminating many murky chambers of thought.

I also take this opportunity to express my gratitude to Dr. N. D. samadhiya, Principal D. V. (P. G.) College, Orai, for his unfailing help, affection and guidance.

I feel indebted to Dr. (Mrs.) Smita Jaiswal for her promptness in bringing out the present thesis. I also highly obliged to Dr. (Mrs.) Sangeeta Srivastava, Department of Psychology, D. V. (P. G.), College Orai, for her assistance.

I extend my thanks to all the persons who consented to participate in the study and gave their precious time from their busy schedule.

I must not forget to express my gratitude to my Father (Shri Shrawan Kumar Agrawal) and Mother (Smt. Indira Agrawal), my elder brother (Rajendra Agrawal), Younger brother (Ashish Agrawal), My husband (Dhirendra Gupta) and all my family members who are responsible for whatever modest achievement including the present study and encouraging me in all my academic endeavors I could have in my life.

I would also like to record my sense of gratitude to all those who cheered me to see this thesis in final form.

I gave my heartful thanks to my all friends. I extend my thanks to all the Doctor's, Nurses and Medical stores who consented to participate and help us in the study and gave their precious time from their busy schedule.

My indebtedness to all authors, Publishers and researchers for the existing analytical and critical guidance, that has been acknowledged in the body of the thesis and also in bibliography.

Poonam Agrawal

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# Chapter -I

## *Introduction*

# Introduction

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## (A) Research Problem and its Logical Base –

Health psychology emerged as a result of the growing disillusionment with modern medicine as well as due to impressive developments, particularly in social, clinical and personality psychology. The emergence of health psychology was an acceptance of the fact that mental health is not just a medical but also a social-psychological concern. Staying healthy is contingent on life style, cultural beliefs, health habits, family support and other such factors. In this perspective what is considered more salient is not the medical reality of a disease but the subjective experience of being ill (Kleinman, 1974). As an emerging field of study in India, Health psychology has yet to establish its identity. The role of social sciences in health care was recognized long ago by the government. The Bhore Committee report (1946) which formed the basis of India's health policy after independence, clearly acknowledged the role of social, psychological and economic factors in the development of health services—particularly in promoting community participation for primary health care.

Type A Behaviour was initially used by Roseman, Friedman and their colleagues to describe a behaviour pattern that appeared to be related to the incidence of heart disease initially used type A behaviour. The behaviour pattern

characterizing type A includes high competitiveness, a sense of time urgency (always feeling rushed), excessive drive or involvement in work, hostility and aggressiveness. On the contrary, Type B people are more relaxed, philosophical and jovial. The general observation is that Type A individuals are perceived to be at greater risk of heart disease. Type A behaviour would be of little more than passing interest to health psychologists were it not for the fact that the type A behaviour pattern has repeatedly been linked to Coronary Heart Disease (CHD). For example a major eight year study of 3000 men who were initially diagnosed as being free of heart disease and as having the type A behaviour found that they developed coronary heart disease twice as often, suffered significantly more fatal heart attacks and reports five times as many coronary problems as those classified as having the type B pattern.

Why should Type A behaviour be linked to coronary heart disease? The most convening theory is that Type A individual tend to become excessively aroused physiologically when they are placed in stressfull situations. This arousal, in turn, results in increased production of the harmonies expinephrine and norepinephrine, as well as increased heart rate blood pressure. Such exaggerated physiological responsively ultimately produces an increased incidence of coronary heart disease.

To study of the linkages between life stressors and health has been one of the most productive areas of research

in the last decade. Much of the work in this field followed the work of Selye (1956) who defined stress in terms of the cumulative experience of varied life events. The results of this loss of control and the ensuing stress are frequently poorer health and even a likelihood of earlier death. These outcomes were confirmed in an experiment conducted in a nursing home where elderly residents in one group were encouraged to make more choices and take greater control of their day to day activities (Lanser and Jains, 1979). As a result, members of the group were more active and happier than a comparison group of residents who were encouraged to let the nursing home staff take care of them. Other research confirms that learned helplessness has negative consequences and not just for the elderly. People of all ages report more physical symptoms and depression when they perceive that they have little or no control than when they feel a sense of control over a situation (Peterson and Raps 1984. Rodin 1986).

Chronic diseases of the cardiovascular system, which include coronary heart disease (CHD), high blood pressure, and stroke, constitute a major public health problem and the leading cause of death in western countries. Many psychological, environmental and behavioural variables interact in the development of these disorders. Therefore, coronary heart disease can be thought of as a disorder that is a result of the individual's lifestyle, and it is not surprising that cardiovascular diseases have been among the most widely studied topics in health psychology. In the United States, CHD continues to be a leading cause of morbidity and mortality. The

Center for Disease Control reports one in five death is attributed to this disease process with more men than women. It is the leading cause for men by the age of 45 and for women by the age of 65.

Thus the researcher selected the following research problem

—  
***“Effects of Type of Behaviour Pattern and Mental Health on Life Stress of Normal and Heart patients.”***

## **(B) Description of variables**

### **1. Mental Health**

Mentally healthy individual is one who is himself satisfied, lives peacefully with his neighbors, makes healthy citizens of his children, and even after performing these fundamental duties has enough energy left to do individual of benefit to society. Possessing mental health an individual can adjust properly to his environment, and can make the best effort for his own, his family's and society's progress and betterment (P.V. Lewkan)

Let us define Mental Health as the adjustment of human beings to the world and to each other with a maximum of effectiveness and happiness. IT is the ability to maintain an even temper, an alert intelligence, socially considerate behaviour and a happy disposition. (K. A. Menninger).

The chief characteristic of mental health, it is evident, is adjustment. The greater the degree of successful adjustment,

the greater will be the mental health of the individual. Lesser mental health will lead to lesser adjustment and greater conflict. The healthy individual can interpret any new situation and adapt himself to suit it. He maintains a healthy and benevolent attitude towards life. He is aware that difficulties visit everyone in life, so that running away from them is cowardice. They can be solved only by squarely facing up to them with courage.

A. V. Shah (1982) has expressed that mental health is "the most essential and inseparable component of health.... an integrated component of public health and social welfare programs....". The emphasis is on prevention of disease as well as maintenance and promotion of health in the community. The preventive aspects of mental health problems when viewed from the primary, secondary and tertiary levels bring to focus major contemporary trends. Over the years, several shifts in emphasis can be observed : (a) a shift from "man and environment" to "man in the environment", not only for understanding man's behaviour in health and illness but also with reference to the development of the personality of the child in the community, (b) a shift from the medical model to the recognition of social factors in predisposing, precipitating and perpetuating disturbed behavior; (c) a shift from the role of intra individual or intra psychic factors to interpersonal or psychosocial factors of the family or community; and (d) a shift from the curative treatment oriented hospital or clinic centered approach to that of

prevention, maintenance and promotion oriented family and community approaches.

Thus the second revolution in public health with its impact on the preventive and promotive aspects of mental health and the third revolution in psychiatry recognizing the socio-cultural factors in mental health problems have led to certain researches which attempt to examine : (a) individuals with potential mental health risks; (b) early detection of people with mental health problems; (c) the role of psychosocial factors associated with mental health problems that facilitate or obstruct successful treatment, maintenance of improvement and rehabilitation; (d) factors associated with relapses; and (e) factors that prevent deterioration in the clinical status of chronic patients with efforts towards rehabilitation.

These research findings are being utilized for making provisions for guidance, counseling, and treatment facilities at the individual, family and community levels and are directed towards the three aspects of prevention in the area of mental health. In these efforts, greater emphasis is placed on the psychosocial and Socio-cultural factors. The sociological and socio-pathological views provide ample support to the contribution of psychological and interpersonal variables with regard to the mental health of individuals, further, rapid social changes occurring in societies seem to have driven man to face competition in his day-to-day life irrespective of whether his abilities or his social conditions permit it or not. Another

important aspect is that in the modern world, as a result of greater use of technological and mechanized ways and the political machinery, man has become a stranger not only in relation to others but also in relation to himself. This has contributed to the failure of the individual to live up to the expectation of relevant others as well as to live up to one's own potentialities. This in turn has led to feelings of helplessness, powerlessness, meaninglessness, anxiety and insecurity. This being the rule rather than the exception in the contemporary world, many individuals are considered to be potential mental health risks. Some of these people have sought counseling and guidance while others have turned to yogic and other alternate methods to seek relief for their problems. From the socio-pathological perspective, over the past few decades many mental health maladies like crime, mental disorder, family disorganization, juvenile delinquency, alcoholism and drug abuse and much that now passes as the result of pathological processes (e.g., gastric ulcer) have been considered as indicative of sick societies implying thereby the inadequacies or failures of social controls or social norms in given societies. Thus the importance of the role of social factors in many mental health problems becomes clear.

### **Definition of mental health**

Available literature from other countries indicates that efforts to define and study mental illness are biased in favor of pathology. Efforts have also been made to define/describe

the criteria or characteristics of normal personality (Coville, Costello & Rouke, 1960; Maslow & Mittelmann, 1951), positive mental health (Jahoda, 1958), normality dealing with theoretical and clinical concepts of mental health (Offer & Sabshin, 1974), and healthy personality from the humanistic viewpoint (Jourard & Landsman, 1980). Grinker, Grinker, and Timberlake (1962) have suggested the possibilities of a variety of "mental health" without questioning the accuracy of the various definitions of mental health, in keeping with the WHO definition, there seems to be an agreement among mental health professionals that mental health is not be mere absence of mental illness. However, there seems to be no consensus on the definition of positive mental health.

Scant Indian literature on the definition or criteria of mental health has been published. Even the epidemiological studies concerning psychiatric morbidity in India only provide operational definitions for identifying index cases but make no efforts to define what mental health really is, accordingly, these studies have reported the prevalence rate of mental illness in their samples but have not mentioned the mental status of the remaining subject. Thus in India no appreciable efforts have been made to define mental health apart from a few passing references like: "The concept of ideal social functioning is the social equivalent of 'Positive mental health'" (Carstairs & R.L. Kapur, 1976) and ".... In the larger context, mental health is the other name of quality of life..." (Wig, 1979). Mental health professionals however agree that

positive mental health is not the mere absence of mental illness but something different (Nagaraja, 1983).

In the view of the existing situation, the efforts of scientists and researchers need to be directed towards making efforts not only to operationally define mental health but also to develop tools to examine mental health.

Community, mental health professionals (A.V. Shah, 1982) believe that the existing number of trained professionals and the available mental health facilities in the country are far from adequate. Hence, mental health planners are advocating innovative means for expanding and extending an appropriate delivery the views, beliefs, attitudes, sensitivity or awareness of the community about mental health problem, lest the mental health facilities provided by the planners remain unused and defeat their very purpose. Some of the researches dealing with the community's views, attitudes and awareness regarding mental health problems and the facilities available need to be considered.

It has always been easier to define mental illnesses than to define mental health. In the United States the American Psychiatric Association has traditionally been the organization to define mental disorders. More recently many have recognized that mental health is more than the absence of mental illness. Even though many of us don't suffer from a diagnosable mental disorder, it is clear that some of us are mentally healthier than others.

## **Traits of Mental Health –**

In order to understand the full implication of mental health, it would be advantageous to know the characteristics of a person who enjoys mental health. Actually, Mental health, like physical health, is also a condition. And its characteristic features can recognize this condition. Roughly speaking, a mentally healthy individual would exhibit the following symptoms:

- 1. Self-evolution** – A mentally healthy individual evaluating himself properly is aware of his limitations. He easily aspects his faults and makes efforts to rid himself of them. He keeps an eye upon himself so that he may be aware of his own tendencies and that he may be in a position to divert them in the desired directions. He introspects so that he may analyse his problems, prejudices, difficulties, etc., and reduce them to a minimum.
- 2. Adjustability** – It has been pointed out earlier also that one special characteristic of a mentally healthy individual is that he adjusts to a new situation with the least delay and disturbance. He is never disturbed of what might have been. He does not try to think of old age when he is young and think of his youth when a senile crank. He makes the fullest possible use of existing opportunities and adjusts to every new situation that presents itself. He is aware of the fact that change is the principle of life, he is ever prepared for change and always finds some suitable mode of adjustment. He has

every desire to benefit the society, with a slowness of intrepidity if its benefit lies that way. Gandhi, Christ, Mohammad, were people of this condemned. In fact, the most important aspect to adjustment is one's own mental condition rather than the external situation. A proper mental attitude gains a kind of immunity from the external situation affecting their peace and calm and balance.

**3. Maturity** – Intellectual and emotional maturity is another peculiar sign of mentally healthy individual. The mature mind is constantly engaged in increasing his fund of knowledge, behaves responsibly, expresses his thoughts and feelings with clarity, and is prepared to sympathies with another's feelings and viewpoints. And in maturity, sexual maturity is very important. The healthy individual behaves like a balanced, cultured and sensible adult in all matters.

**4. Regular Life** – Habits are an important element in maintaining mental health. Forming proper habits in matters of food, clothing, the normal routine of daily life leads to their becoming systematic and regulated, which in the long run, economics upon energy and time. Many people are seen worrying over the most trifling thing in their routine. Some women experience such acute difficulty in determining the sari and blouse that they should wear outside the house that it leads to considerable mental pain and complication. Some individuals are always conscious of the fact, erroneously, that their tie is not straight, and they spend much time knotting it

correctly, in spite of which they can be seen fiddling with it all the time. Such nervous behaviour is not a sign of mental health. Healthy persons perform most of the common functions of life with quick assurance and a show of naturalism, without any bother and fuss. Their life is a model of regularity, balance and measured calculation.

**5. Absence of extremism** – Aristotle believed that the ideal man lacks excess in any and every direction, and the principle that excess of anything is bad is a golden rule as far as mental health is concerned. Whatever the instinct, it is allowed to dominate an individual, it will bring him to harm and endanger his mental health. Some women go through any amount of criticism and degradation besides pain but they cannot forego their habit of quarrel. An unnecessarily courageous individual is often a prey to accident. And for the voluble person there are many occasions of regret and painful recollection of what might have been. Excessive ambition is another trait that never lets its processor rest. Hence, in order to maintain mental health, one's life should be integrated, interests should be wide and the personality balanced. Extremism is no well-wisher of mental health.

**6. Satisfactory social adjustment** – As has been pointed out, from the point of view of mental health, a healthy individual maintains good adjustment with social situations, and is engaged in some or the other project intended to benefit society. And this is because in modern society the

proper development of everyone's personality can take place only if there is mutual cooperation. Social relationships are a part of everyone's life. The greater the balance of these social relationships and the greater simplicity, the better will be the individual's mental health. Improper conduct on the part of others can be the cause of both mental problems and diseases. Hence, proper behaviour and proper feelings are essential for everyone.

**7- Satisfaction from chief occupation** – For mental health it is essential that everyone should find satisfaction from his chief cooptation, his vocation. The individual who studies only to pass the examination and finds no pleasure in his work is neither a good student nor a healthy individual. A helpful professor teaches without worrying about the financial implications of his profession, an author writes, a businessmen trades and a laborer but with interest. Money is the result of work but if one works only for it, that much time is obviously a waste. If the work interests an individual, it will yield more money, but at the same time, a proper utilization of time will bring an increase in his pleasure and happiness. In fact, if one works for interest, one maintains it even in the event of a loss in trade or at least, the pain of loss is considerably lessened.

In this manner, mental health is that condition in which the individual manifests self-evolution, adjustment, maturity, regular life, and absence of extremism, satisfactory social adjustment and satisfaction from his chief occupation.

Complete mental health is an ideal. Any individual who possesses the greatest number of these qualities will be nearest the ideal.

### **Mental Health Awareness in the community-**

Mental health is an integral part of the health needs of any country. Enhanced understanding of the health requirements have brought to light the importance of environmental and socio-cultural variables in the causation, management and prevention of illnesses. The community mental health movement developed within this frame work marks a distinct trend by focusing on the web of interpersonal relationships and the general social milieu in which the individual is embedded, so as to evolve an integrated approach aimed at the prevention and management of mental health problems in the community.

The early identification of potential mental health risks, restoration of mental health, maintenance of improved mental health, prevention of possible relapses and deterioration in chronic mental patients depend to a large extend on the utilization of available psychiatric facilities in the community. This in turn depends on the beliefs, opinions and attitudes of the community in general and relatives, of mental patients in particular regarding mental health problems.

### **Studies on Community or General Public -**

Bhargava, S.N. Sharma, and B.V. Agarawal (1980) interviewed coronary heart patients three weeks after an acute attack and found a high incidence of neuroticism, anxiety and somatic symptoms. Assuming that anxiety is a possible factor preventing recovery and producing psychic invalidism they have advocated counseling services for these patients.

Chattopadhyan, Biswas, Chattoraj, and Basu (1979) have assessed state and trait anxiety in psychosomatics comparing them to psychotics-somatic and normal and found that state anxiety was high in the three patient group as compared to normal while trait anxiety was highest in psychosomatics followed by psychotics and somatics in that order. The authors believed that psychosomatic symptoms were an expression of their basic anxiety which in turn was attributed to their heightened state of arousal.

Pestonjee and Bagehi (1978) have examined the need patterns of cases of myocardial infarction, angina pectoris and normal subjects and found that coronary patients were higher on need-press variables as compared to normal.

Smokers and non-smokers who were victims of coronary heart disease were assessed for their personality traits, psychological stresses and habits by Mahendru, Alam and Sikka (1978). Compared to nonsmokers, smokers were more schizoid, obsessive, and emotionally unstable with high neuroticism and extraversion and experienced a higher number of stresses.

## **Magnitude of Mental Health Problems -**

Epidemiological studies on mental health problems conducted in different parts of the country, using different criteria for "case ness", and different methodologies, have revealed the magnitude of the problem. A consensus between these studies has revealed a 1% prevalence rate in the general population (National Mental Health Program, 1982).

On the basis of epidemiological studies on urban communities, the incidence rate of psychiatric morbidity was observed to be (a) 0.32 in a group of persons covered by the ESI scheme and their family members (K.Singh , 1977); (b) 22% in parents of schizophrenics and 20.7 in and urban group (Nandi et al. , 1980); (c) 4.7% (A.V. Shah, Goswami, Maniar, Hajariwala & Sinha, 1980); (d) 13.9% and the majority of this group was neurotic (Harding, 1980) ; (e) 16% to 30% in the general population and 10% to 15% in medical clinics of which nearly 15% followed a chronic course (figures were related to depressives) (Wig & Murthy, 1981) ; and (f) 36.1% in general practice (Krishna Murthy, Shamasundar, Omprakesh & Prabhakar, 1981).

A review of studies on awareness and attitudes towards mental illness does not permit any consensus regarding the community's attitude. A major obstacle is the disparate efforts in this area. The groups studied have varied from large heterogeneous groups to small homogenous groups. The size

of the sample has varied from 17 subjects to 500 subjects. In some of the studies, socio-demographic details of the study groups have not been mentioned. Most of the researchers have utilized questionnaires or interview schedules designed specifically for their studies or western tools or Indian adaptations of western tools. Though most of the studies focus on the attitudes towards mental illness, causes of mental illness, help seeking sources and social acceptance, yet it is difficult to arrive at a commonality in the findings. At times the findings appear to be contradictory in nature which may be due to methodological errors in the sampling procedure, sample size and the choice of tools.

Well designed studies on attitudes and awareness regarding mental health problems or mental illness are urgently required as they throw light on the ignorance and prejudices of the community regarding pertinent aspects which need to be dealt with by way of mental health education. Keeping in view the practical utility of such research findings to the day-to-day clinical work with those facing mental health problems and for helping mental health planners, it is desirable to have multi centered studies with the understanding of using a common culturally valid tool on certain relevant and definable populations.

### **Counseling and Guidance:-**

In mental health area as a part of public health, counseling and guidance have a major role in the prevention of mental health problem and promotion as well as

maintenance of mental health. Studies on awareness of mental health problems among the family and community on the one hand and their help seeking efforts at the mental health or psychiatric setup indicate the felt need of the community to receive professional help for problems which may range from mild to severe degree. This paves the way for professional counseling and guidance services.

On the positive side, there have been a few initial efforts at research in counseling and guidance in the educational area. Further, there have been a few reports of studies which have extended counseling facilities to surgical patients during the preoperative phases. Thus, one observes that in India also, mental health as a part of public health is making inroads into the area of health psychology through the use of counseling and guidance procedures.

The disappointing aspect is the dearth of a substantial number of research studies. The theoretical articles available aim at stressing the role of counseling and guidance in educational, vocational, health as well as family and parenting counseling.

## 2. Behaviour Pattern

They are people with a highly competitive craving for achievement and recognition, a tendency to hostility and aggression, and a sense of tremendous time urgency and impatience. They see goals and challenges everywhere, want to win every game in life, speak fast, act fast, interrupt and

make impatient gestures with other people, can't bear to wait or queue, measure success in terms of material gains and number rather than quality of goals achieved, and are only superficially interested in aesthetic aspects of life. Phil Evans (1998)

A crucial aspect of personality, in relation to RTA risk, that has only recently achieved recognition is Type-A Behaviour Pattern (TABP). The term TABP originated when two cardiologists (Rosenman & Friedman, 1959; Friedman & Rosenman, 1974), concerned with spousal variance in diet, discovered that individuals who suffered from heart disease contrasted significantly, behaviorally and emotionally, when compared to similar individuals that did not suffer from the same condition. Friedman & Rosenman (1974) predicted that the individuals who suffered from heart disease were more likely, as opposed to others that did not suffer from heart disease, to exhibit a behaviour style recognized today as TABP. Type a personalities have following characteristics:

- Impatience
- Competitiveness
- Easily irritated
- Quick to anger
- Suspicious
- Hostile
- Driven to achieve
- Aggressive
- Perfectionists

- Highly successful but dissatisfied
- Try to do more than one thing at a time
- Preoccupied with deadlines
- Rapid, loud speech
- Often interrupt others

Conversely, Type B Behaviour Pattern (TBBP) was distinguished, from TABP, by relatively less competitive, hostile and hurried behaviour. Individuals that display this form of behaviour pattern are inclined to 'take things easier'. The characteristic of TBBP as follows –

- Relaxed
- Balanced Behaviour
- Philosopher about life
- Slow in speaking and working
- Have a time to all things
- Come back from hard situation
- Calm and pleasure
- Introvert personality

Individuals that are of Type A behaviour pattern are said to display three distinct features. Sarafino described these features :

➤ **Competitive achievement orientation:** Type A Individuals tend to be very self-critical and strive toward goals without feeling a sense of joy in their efforts or accomplishments. Inter-related with this is the presence of a significant Life Imbalance. This is characterized by a high work involvement.

- **A sense of urgency:** Type A people seem to be in a constant struggle against the clock. Often, they quickly become impatient with delays and unproductive time, schedule commitments too tightly, and try to do more than one thing at a time, such as reading while eating or watching television.
- **Anger/hostility:** Type A individuals tend to be easily aroused to anger or hostility, which they may or may not express overtly.

In addition to the above characteristics, Suinn (1977) proposed that two factors also contribute to the maintenance of TABP: reinforcement and stress. Suinn (1977) put forward that Type A characteristics led to outcomes that were profitable. Furthermore, if the rewards were powerful and frequent, the Type A behaviour would become over-learned and therefore lead to a strong habit pattern. This pattern would then be generalized across other conditions such as various recreational activities not normally demanding Type A behaviour. This is then reflected in the driving situation. For example, a study at Manchester University found an association between aggressive driving and positive affect such as excitement and/or enjoyment, (source: Driving Standards Agency). Suinn's (1977) proposal supported an early study on driving behaviour by Tillman & Hobbs (1949) who found that individuals tended to adopt the same behaviour on the road as they did in other day-to-day activities. While a later study by Shaw (1965) found that driving offered the individual opportunities for delusions of grandeur and anti-social behaviour, and many accidents were caused by the fact that people drive as they would live.

Although Parry (1968) never went as far to include TABP in his seminal study of road traffic accident risk (perhaps due to the lack of

a reliable measure at that time), he did acknowledge most of the typical characteristics associated with the behaviour pattern. For example, he stated that, as a rule, road users would be susceptible to high levels of stress on the road, and some personality types were more likely to express negative emotions under such conditions. This has been established with individuals that exhibit TABP, i.e. they have shown a disposition towards replying with a greater intensity and readiness towards stressors, frequently regarding them as jeopardizing personal control. Later Suinn was to argue that stress was as much prompted by the conditions in which the Type A individuals had put themselves (i.e. prompted by cue conditions external to the individual) as by their own driven nature. Further, this propensity to react negatively towards stressors has been shown to be heightened by many of the characteristics of extended urbanisation, (Chew, 1997), such as congestion on the roads and a faster pace of life in general. In addition, Zyzanski (1978) demonstrated that individuals exhibiting TABP had elevated mean scores for deaths due to accidents, and violence.

The Type A Personality Inventory, primarily developed by Friedman & Rosenman (1974) to investigate TABP with reference to coronary heart disease, was utilized within the questionnaire as it identified and measured the personality characteristics that were essentially concerned with in RTAs. The Type A Personality Inventory (1974) consists of four behavioural tendencies: extreme competitiveness, significant life imbalance (typically coupled with high work involvement), strong feelings of hostility and anger, and an extreme sense of urgency and impatience.

## Is type-A behaviour a cause of coronary heart disease?

If claims that stress from work may cause coronary heart disease are true, then the medic logical implications are serious. These claims may be derived from suggestions in the literature that factors in the environment can induce type-A behaviour in individuals and thus increase an individual's risk of coronary heart disease.

Type-A Behaviour has been described as the behaviour of an individual who is constantly struggling to reach poorly defined goals, in the shortest time possible, and with the added elements of hostility and aggression. Two major prospective, non-randomized studies, which support this concept, are examined and criticized. Another, the largest and most recent study that was both prospective and randomized (the Multiple Risk Factor Intervention Trial), did not confirm the results of studies which showed a higher incidence of myocardial infarction, recurrent infarction and mortality in patients with type A behaviour when compared with patients with type B behaviour.

Methods of defining behavioral types are not consistent and there is no relationship between behavioral patterns, as defined by "type", and the extent of coronary disease as defined by coronary angiographies. Pathophysiological pathways that have been postulated between type-A behaviour and coronary heart disease are discussed and it is concluded that there is no scientific proof of a link that has been established between them. Recent suggestions of other psychosocial causes of coronary heart disease include outwardly directed hostility and inwardly directed anger. A genetic

determinant has also been suggested; wherein both type-A behaviour and coronary heart disease have a common but parallel course. The inability to prove that type-A behaviour causes coronary heart disease does not rule out the possibility that other psychosocial causes may be related to coronary artery disease.

**What is it about the type A pattern that carries risks for CHD, and what factors mediate the risks?**

The type A pattern as a whole includes several different traits or characteristics, and studies that have broken the overall pattern down and examined the association between each of the components and CHD suggest that they do not all play an equal role. Dembroski et al. (1985) assessed people on 12 components of type A and looked at the extent to which each predicted atherosclerosis. Only two of the 12 components were related to greater atherosclerosis. These were (1) potential for hostility and (2) tendencies not to express anger openly. Hostility, and especially what is often called 'cynical hostility', included: the feeling that other people cannot be trusted; the perception that other people are being antagonistic or threatening; suspiciousness about the motives of other people and resentment about their behaviour; and frequent feeling of anger.

These characteristics were among those that most clearly differentiated the people who went on to develop CHD from those who did not. Researchers also went back to the data from the large follow-up studies, like the Western Collaborative Group Study and the Framingham study to look at which particular aspects of the pattern were the best predictors of CHD. These included some of the measures of hostility and aggression, but also measures of the ways

people spoke during the assessment interviews, such as how fast they spoke, how emphatic their speech was, how much they interrupted, and how they responded to when the interviewer paused or hesitated.

Other aspects of the type A pattern have also been identified as key features, and those features formed the basis for 'theories' of type A behaviour. These include beliefs about self-esteem and how it is achieved. There is some evidence that a struggle to maintain self-esteem is the primary motivation behind the drive to achieve among type A individuals. Another factor identified by researchers trying to explain how type A behaviour could lead to higher risks of CHD is the need to be in control.

Some research has showed that type A individuals were more likely to behave as if they were trying to maintain control. They were observed, for example, to spend more time monitoring the stimuli that warned of electric shocks, even if they had little control over the shocks themselves. This kind of evidence was consistent with a view that type A individuals struggle to obtain or maintain control, and where this is not possible they suffer from frustration and exhaustion, and a syndrome of 'learned helplessness'. The issue of type A and the need to be in control allows us to link this aspect of personality with theories of stress in a way that helps us to understand why such individuals are more likely to suffer from CHD.

There is some evidence from experiments that type A individuals are more reactive to stress, that is, they show greater physiological responses associated with stress and arousal when they are placed in potentially stressful situations. Those responses

include measures of neuronal and hormonal changes of the kind that make up the pattern of action of the sympathetic nervous system, such as heart rate, blood pressure, skin conductance, and catecholamines production. The clearest differences between type As and others come from studies where the testing situation challenges or provokes the individuals, rather in the same way that individuals were challenged in the structured interview method of assessment for type A.

### **Measurement of AB behaviour pattern –**

Type A behaviour can be measurement through constructed interview or can be questionnaire method. Roseman (1978) made a constructive interview in which asked some question to person that what they do or what will be response in this type of condition that bring special type of anxiety, competition and hostility. The response of this type situation gives type A measurement scale. Most important in this method is the method of response, which is received by subject. In this method some question asked as in which Type A behaviour characters like high and sharp voice or violence or aggressiveness shows. Interviewer person asked question in slow voice but the responder give him challenge and show his anger ness towards that questions.

Second method is questionnaire method, which is developed by Jenkins. This is a self-report questionnaire, which have 50 items. The response shows type A & B both behaviour characteristics.

### 3. Stress

The term stress in medicine and biology today is used in a number of different ways. It may refer to external forces or conditions experienced by the organisms, or to the reaction of the organism to these. When applied to external forces the term stress is similar to its use in physics and applies to an potentially strain-producing, to the person to whom it is applied. Anything may be considered a stress if it threatens the biological integrity of the organism, whether directly by its physical or chemical properties or indirectly of its symbolic meaning.

Selye uses the term 'a state of stress' to denote a specific syndrome occurring in the body in response to certain agents to which he refers as 'stresses'.

In medicine and psychiatry, the term stress is usually used to denote various psychological situations, which can produce disorganization of behaviour, including physical and mental illness.

A convenient definition of stress is any stimulus or change in the external or internal environment, which disturbs homeostasis, which under certain conditions, can result in illness.

" Stress, like a motive, may be partly or wholly unconscious, though the presence of uneasiness or anxiety may be the clue that stress is present. Stress is inevitable and sometimes chosen

voluntarily: mental health results not from lack of stress but ability to cope with it satisfactorily." Coleman

Stress cannot be considered in isolation. We need to know what stimuli or situations are potentially stressful and we need to know the effect produced and mechanisms mediating the organism's response to stresses.

Stress in the twenty-first millennium not something new, not anything unknown. Stress has been experienced since time immemorial, but its toll is higher than ever before. In the UK, stress related absenteeism was 10 times more expensive than all other industrial disputes put together, while heart disease was estimated to cost an average UK company of 10,000 employees, 73,000 lost working days each year.

With increasing complexity in our lifestyle, the level of stress has been rising at a phenomenal rate. The factors that contribute to stress not only differ between cultures, but also within a culture itself; from a sophisticated industrial society to for-ages; and from upper class to lower class within the same society.

Research studies exploring the interrelationship between behaviour, immune system and nervous system, called psycho-neuro-immunology (PNI), have clearly demonstrated that neural processes that in turn are influenced by mental processes affect the immune system. If we are depressed, it affects our neural processes, and this situation may weaken the immune system or vice-versa.

Stress considerably outweighs that of its history, so we should know about the science of stress (what it does to our body and us).

## **Concept of stress in the Indian Tradition**

### **Ayurveda:**

While there is no exact parallel for the term "Stress" in Indian society and culture, the ancient philosophical and religious texts provide considerable information. They contain references to the very many causes of stress like states. Even more important is the information on how these conditions can be managed. There are at least two approaches to the teaching of stress management. In the first approach one begins with the nature of human existence and moves systemically to its dysfunctioning, i.e. sees how stress is generated under certain circumstances (the Ramayana is a classical example of this approach).

The Bhagwad Gita exemplifies the second approach: a problem is identified and the principles of dealing with its are woven around the problem and its resolution (i.e. dilemma faced by Arjun and Krishna's discourse on how to resolve it). At the base of all worries is desire and the associated ego involvements, called klesha. Five types of klesha have been enunciated: Avidya (ignorance), Asmita (egoism), raga (attraction), Divesa (repulsion) and Abhinires (lust for life), with the first lying at the base of the other four. It is when one gets caught between klesha that dukha (sorrow of suffering) arises. In other words, klesha lead to dukha.

Various indigenous systems (e.g. Samkhya, Yoga and Ayurveda) highlight these two concepts, Klesha and dukha, though not exact parallels are concepts, which come closest to the word stress in the technical sense of the term. As seen in the yoga framework, klesha refers largely to the stressor aspect, while dukha refers to the phenomenon of the stress response itself.

### **Stress, Distress, Disease and Mechanism**

"Stress can be defined as stimulus or change in the external or internal environment such a degree in terms of strength or intensity or duration as to tax the adaptive capacity of the organism to its limit, and which, in certain circumstances, can lead to a disorganization of behaviour or a dysfunction which may lead to disease. What may constitute a stress may consist of physical stimuli, infections (bacterial, viral or fungal) or allergic reactions, or may refer to a whole series of stimuli or change in the social or psychological spheres of life". - **W. L. Linford Ress,**

Definition of stress is one, which evokes the manifestation of a general Adoption Syndrome - **Selye's.**

Thus this is a physiological response, and the effect of the stress can be measured in terms of action on the hypothalamus, the adrenal cortex, the sympathetic-adreno-medullary system, and the secretion of different hormones. Physiological stresses differ from physical stresses in that the power or force of the psychological stress will be determined not only by its inherent threat but also by the way in which the individual perceives and appraises the

significance of the potentially challenging event, and what degree of treat the perceives as appertaining to the stimulus situation. When an event is perceived as being harmful or threatening, a variety of coping mechanisms may be used as a defence. Reality may be discounted by denial. Which is very common mode of dealing with distressing events. Including illness like cancer, coronary heart disease, leukemia and myocardial infection.

The degree of subjective distress may be modified by displacement, e.g. anxiety or hostility into smiling or laughter; into sleep, or into eating, drinking or smoking.

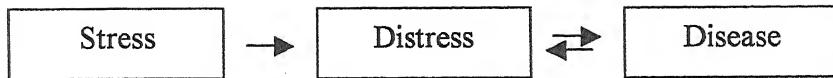
"Distress denotes an unpleasant emotional experience which may arise in response to environment influences or to changes in some internal environment, or as a reaction to some disease or internal environment, or as a reaction to some disease or disability."

- W. L. Linford Ress

Again, "Disease is a notoriously difficult is used to denote disability arising from bodily or mental malfunction which imposes difficulties in coping with everyday work and responsibilities, interferes with well being and produces distress."

- W. L. Linford Rees

The theme is shown in the following figure. We will consider the ways in which stresses produce distress in the individual and in which, in certain circumstances, they may produce disease, which in turn can also cause distress by the threat of the illness itself, or the disability it causes.



## Stress and life changes –

Holmes and Rahe quantified life events giving point value to life changes that require adoption. They found that there was a critical level at which too many of these events happening during a one-year time span to one person, put that person at great risk of illness. Of those people who accumulated 300 points in one year were 80 percent at risk of illness in the near future, with 155 to 299 points, 50 percent became ill in the near future. Of those with fewer than 150 stress points, 30 percent became ill shortly after the life events.

It has been found that situations relating to illness, occupation, marriage and depression were the most likely to produce anxiety and depression. The life changes affected both sex but women were more vulnerable, also the poor and disadvantaged groups were more vulnerable. The change created significant strains when it was unexpected and when it not only involved to a new status that involved further hardships and problems.

Loss of work constitutes a stress and may tax the adaptive capacity of the person to the maximum, particularly, if it means marked loss of financial status, marked loss of prestige, or creates additional problems.

## Mental stress as a causal factor in the development of hypertension and cardiovascular disease

Chronic mental stress can come in a variety of forms, and may originate in the external environment, as an interaction between the individual and the environment, or from within the individual. Examples of things causing mental stress include earthquakes, job stress, and several measures of negative affect; all have been shown in prospective studies to have adverse effects on the development of hypertension and coronary artery disease.

After the Hanshin-Awaji earthquake in Japan, there were increases of blood pressure and deaths from myocardial infarction that persisted for several months. Job strain, which is defined as a combination of low control and high demands at work, has been associated with increased blood pressure and coronary heart disease outcomes, particularly in men. Negative affect, which may manifest itself as depression, anxiety, anger, or hostility, has similarly been related to hypertension and coronary heart disease. Depression is emerging as the most important component with respect to cardiovascular disease. A common link for all these factors is a perceived loss of control over one's environment

A variety of evidence shows that stress contributes to a more or less sustained elevation of blood pressure, as well as to the triggering and aggravation of cardiovascular pathology, especially coronary heart disease. Experimentally induced changes, that may be pathogenic due to their duration or repetition, can be produced in

homodynamic, lipid metabolism, or homeostasis. High blood pressure, vascular heredity, but also a trend to inhibition of action, seem to be responsible for hyperactivity to stress. Hypertensives are particularly reactive to active stresses related to controllable situations, experienced as challenges. Several prospective studies in healthy subjects have confirmed the increased risk for coronary heart disease of certain psychological characteristics:

### **"Stress" and coronary heart disease: psychosocial risk factors**

An Expert Working Group of the National Heart Foundation of Australia undertook a review of systematic reviews of the evidence relating to major psychosocial risk factors to assess whether there are independent associations between any of the factors and the development and progression of coronary heart disease (CHD), or the occurrence of acute cardiac events.

The expert group concluded that (i) there is strong and consistent evidence of an independent causal association between depression, social isolation and lack of quality social support and the causes and prognosis of CHD; and (ii) there is no strong or consistent evidence for a causal association between chronic life events, work-related stressors (job control, demands and strain), Type A behaviour patterns, hostility, anxiety disorders or panic disorders and CHD.

The increased risk contributed by these psychosocial factors is of similar order to the more conventional CHD risk factors such as

smoking, dyslipidaemia and hypertension. The identified psychosocial risk factors should be taken into account during individual CHD risk assessment and management, and have implications for public health policy and research.

Well before the Whitehall studies, evidence existed of a relationship between job stress and CHD. Jenkins (1971; 1976) had identified factors like overload at work and chronic conflict as risks for CHD.

Other research has focused on stressful life events; events involving stressful changes and adjustment in a person's life. In one study, Rahe & Lind (1971) found that the incidence of such events was much higher in the lives of people during the period leading up to the onset of heart disease. Later, it became clearer what the physiological mechanism might be in a relationship between stress and CHD. By following people over time, Theorell & Emlund (1993) showed that significant negative life changes were associated with increasing diastolic blood pressure and fatty materials in circulation in the blood (including the fatty acids that are involved in increasing levels of cholesterol).

Another way of looking at stress and CHD is to look at social support, the extent to which one can rely on emotional, practical support from those around the individual, which is a factor that has been regarded as a protection against the impact of stressful life experiences. Remember that the lower grade employees, who were at higher risk of CHD, in the Whitehall study, reported less social support. There is evidence from other studies that high levels of social support reduce the risks for CHD (Eriksen, 1994).

In the 1980s, Shirley Fisher suggested an indirect way of estimating the effects of material and non-material risk factors for CHD (Fisher, 1986). She suggested looking at the extent to which the distribution of CHD from community to community resembled other illnesses that are known to reflect material factors to a greater or lesser extent. Infant mortality, for example, tracks material deprivation quite closely from one area or group to another. Suicide also tracks deprivation, but to a lesser extent than infant mortality, as suicide reflects aspects of psychological stress to a greater extent. She asked whether the pattern of CHD resembled that of infant mortality or suicide more closely? The answer was that, area by area, the incidence of CHD was closer to that of suicide than that of infant mortality.

So there is a reasonable case from the evidence for a relationship between stress of one kind or another and CHD. To what extent, however, can individuals create their own stress levels? One personality factor that may be related to stress and which has been widely investigated in relation to CHD is type-A behaviour.

There is also a link between those aspects of reactivity to stress and physiological changes that increase the risks for CHD, including arteriosclerosis. It is probably over simplistic to think about 'reactivity to stress' as a simple, unitary concept, but there is certainly evidence that stressors can affect cardiovascular risk factors, as well as neuro-hormonal responses. One mechanism that has been proposed is that stress can cause vasoconstriction and also increase heart rate, so that blood pressure and the wear and tear on coronary arteries would increase. Another possible mechanism is hormone based, and involves catecholamines, which may affect fluctuations in blood

pressure that reduce the resilience of blood vessels. Catecholamines have been associated with the build up of platelets, and animal studies have showed that arteriosclerosis can be affected by stress responses. So more extreme responses to stressful situations may be one of the ways in which type A individuals increase their risks of CHD.

### Some other facts regarding Stress

**Fact 1.** Stress is an inevitable part of life, manifested universally as much in the east in the west.

**Fact 2.** Stress does not invariably lead to disease. There are a variety of ways to counteract the debilitating effects of stress.

**Fact 3.** The effect of stress is not always a function of variables such as age, sex and socio-economic status. It tends to cut across major demographic variables and it is this fact which increases its universality.

### Source of stress –

It is said that stress results from an imbalance between environmental demands and personal adequacies to meet those demands. However, management of stress is no possible unless the individual is aware of the specific sources of stress. Do we ever stop to think why we feel so burdened? What are the facts of life that make us so tense? Alleviation of this tension is possible only if the sources are identified. The effects of stress are non-specific symptoms, which warn the individual that something is wrong. A permanent cure these

symptoms are possible only by the eradication of the source/root of these symptoms.

### **General Sources of stress**

Stress can emanate from a variety of sources. Pstonjee (1992) has identified three important sectors of life which stress may originate.

- **Job and Organisation** – These refer to the totality of the work environment, such as jobs description, work culture, interpersonal relationships and compensation offered.
- **Social sector** – Denotes the sociocultural of a person. It may include religion, caste, language, attitudes and beliefs of others, the political and legal environment etc.
- **Intrapsychic sector** – This encompasses those aspects which are intimate and personal such as an individual's values, abilities, temperament, personality, needs, expectations and health.

The model further contends that each of these sectors operate in a complex, interactive manner, rather than merely being summated together.

Proposing a somewhat different categorization Brown (1984) has listed five categories –

- **Customary anticipated life events** – (Any major change in life), Such as marriage, divorce, beginning/ending of schools, children living home and retirement.
- **Unexpected life events** – (Any major life event which occurs suddenly), for example, unexpected bereavement, sudden loss of job, major accident, becoming aware of a terminal illness (Cancer, Heart patients, Diabetes etc.)

- **Progressive, accumulating situational events** – (Any continuously recurring problems in life's activities) like daily hassles, job and family stress, school stress and competition.
- **Personality glitches** – (Any personal traits that create social problems) such as poor communication, low self-esteem, insecurity, lack of confidence, poor decision making and fear of failure.
- **Value Dependent traits** – (Circumstances generating thought-feeling conflict) for instance, revolutions, broken homes, moral dilemmas such as cheat or fail and peer pressure vs. personal conscience.

This scale with the first two categories of stress i.e. anticipated and unexpected life events. The major life events cause considerable stress, a person gradually readjusts or adapts to them. A totally different type of stress arises from the problems of day to day living. There are stressors to which the only readjustment that is possible to become accustomed to them.

### **The Physiological Consequence**

In order to prepare the person to cope with negative or positive environment demands, certain 'automatic' physiological changes (governed by the automatic nervous system) are triggered off. These changes help to raise body processes to the level required. Stress affects the heart rate, respiration, blood pressure and digestion among others. Once the danger/emergency has passed the system returns to normal.

A major physiological consequence is hypertension. What is hypertension? It is nothing but high blood pressure. Simply stated, blood pressure refers to the pressure of the heart that forces blood to various parts to the body. This pressure varies with the time of the day, adjusting to the demands of the body. It is generally lowest in the early hours of the morning when we are in deep sleep, and rises sharply we get up, begin our day, or during exercise. Hypertension denotes the condition when the blood pressure is constantly higher than normal.

The physiological consequences of stress are not limited to hypertension or cardiac conditions. Another major effect is on the immune system (Lovallo, 1997). There are at least three different ways in which stress affects the immune system.

- Stress affects the immune activation to not only fresh viral onslaught but also tends to reactivate latent viruses. Emotional distress can lower the effects of Hepatitis B vaccination, it can reactivate latent virus such as those causing Herpes Simplex.
- Stress increases the risk rheumatoid arthritis. Sternberg et al. (1991) have proposed that certain physiological mechanisms associated with depression (a know symptom of stress) may enhance susceptibility to or increase the severity or rheumatoid arthritis.
- Life stressors after the immune system function. Researchers on volunteers experiencing negative life events and negative emotions indicate or containing colds. People were more likely to have higher rates of infection or

contacting colds. Psychologists confirm strong links between chronic stress and the immune system function.

### **The emotional Consequence**

Emotion refers to feelings aspect of behaviour such as mild irritation, rage, despair, sadness, love and liking. However, whereas the physiological effects of stress can be clearly pinpointed, observed and measured, emotional changes are highly subjective. One can experience them, but one cannot express but maintains a cool exterior, clearly indicating that emotions are not always observable. In general, emotions are internal states, which are often short-listed, and can even be experienced in combination (one can feel anger, fear and even pleasure at the same time). Three identifiable emotional constellations that are a fairly regular out-come of stress are anxiety, anger and depression.

### **The Behavioural Consequence**

Stress may do considerable damages to a person internally, but there are external manifestations too. The most important and probably the most relevant for the manager is how stress affects the ways in which people behave, the effects on their interpersonal behaviour. There are at least three important areas of interpersonal behaviour, which are affected relationships within the family Relationships with peers, and relationship with other people. Some of commonly seen behaviorally effects are –

- Arguments and fights over relatively trivial matters.

- Over dependence.
- Uncommunicativeness.
- Unreasonableness.
- Withdrawal of love.
- Lack of interest/over interest in sex.

### **The Cognitive Consequence –**

The relationship between stress and mental functioning is in form of a U-shaped function. Thus, moderate levels of stress are considered optimal for mental operations such as attention, learning, problem solving and creativity. At lower levels of stress, one fails to be attentive enough (may show all the signs of boredom weariness, lack of interest, lethargy), and at higher levels, cognition may become highly distorted. Some of the distortions are as follow.

### **Explanations how stress can cause disease –**

Over the years various explanations have been proposed, ranging from those based on personality dispositions to purely physiological mechanisms. As discussed earlier, repeated activation of stress response causes immune suppression or weakening of the immune system of the person. Under such circumstances, the person is vulnerable to different types of cancer, depending on the vulnerability of the organs.

## **Some Data on Stress related Disease –**

1. Every their adult suffers from Malesiya, sleep disorder, fatigue, dejection or anxiety.
2. Every seventh working person is mentally exhausted at the end of the working day.
3. Every other man and three women out of four are likely to suffer from pronounced mental breakdown between birth and the age of 60.
4. Every 10<sup>th</sup> man has a alcohol related problem.
5. In a population of 8.3 million 2000-commit suicides every year; 20,000 attempt to do so.

## **Old Age Stress –**

While stress due to long working hours ma know a decrease, the incidence of post-retirement stress may increase. With the VRS & other forms of downsizing on the rise on the one hand, and improved life expectancy any old age health on the other; the proportion of 'grey' population is increasing. Taking advantage of the golden handshake proffered by companies seems extremely attractive, until the day one is actually free.

## **4. Heart Disease (CHD - Coronary Heart Disease)**

**What are coronary heart disease (CHD) and how big a health problem is it?**

There are two main forms of CHD. These are Angina Pectoris and Myocardial Infarction (MI, or 'heart attack'). They both involve

ischemia, which is the starvation of blood supply to the heart, and both are caused by atherosclerosis, which is the build up of platelets, or fatty deposits, on the walls of the artery.

The heart is a muscular pump, whose contractions cause the blood to circulate in the body. Heavily oxygenated blood enters from the lungs on the left side of the heart and is pumped out through the aorta, the main artery leaving the heart. Blood returns to the right side of the heart and is pumped back to the lungs through the pulmonary artery.

The heart also supplies blood to itself, through the coronary arteries, and illnesses caused by atherosclerosis affecting the coronary arteries, narrowing them or blocking them so that the flow of oxygen to the heart is obstructed, are called coronary heart disease.

In angina, the heart is temporarily starved of oxygen, usually after a period of exertion, leading to ischemic pain - the pain in the heart muscle caused by oxygen starvation. In MI, the already narrowed artery is blocked by a clot of blood or other obstructing deposit.

A heart attack – MI – is a very sudden illness, and might be considered a preferable way to die compared with, for example, cancer. Coronary heart disease is the leading cause of death in Britain and the USA. It will kill up to one third of us, and is often a premature killer, killing people before they are old. Men are especially at risk for CHD in middle age. This may be because, as Kaplan et al's (1996) research appears to show, women are protected up to the menopause by hormonal factors that inhibit atherosclerosis.

CHD is very much a western, industrial illness that is strongly associated with behavioural and lifestyle factors including smoking, diet, and exercise and stress. For this reason there is a great deal that can be done to reduce its incidence.

A heart attack occurs when the supply of blood and oxygen to an area of heart muscle is blocked, usually by a clot in a coronary artery. Often, this blockage leads to arrhythmias (irregular heartbeat or rhythm) that cause a severe decrease in the pumping function of the heart and may bring about sudden death. If the blockage is not treated within a few hours, the affected heart muscle will die and be replaced by scar tissue.

A heart attack is a life-threatening event. Everyone should know the warning signs of a heart attack and how to get emergency help. Many people suffer permanent damage to their hearts or die because they do not get help immediately.

#### **Different heart disease –**

##### **1. Angina**

Angina is chest pain or discomfort that occurs when your heart muscle does not get enough blood. Angina may feel like pressure or a squeezing pain in your chest. The pain may also occur in your shoulders, arms, neck, jaw, or back. It may also feel like indigestion.

Angina is a symptom of coronary artery disease (CAD), the most common type of heart disease. CAD occurs when plaque builds up in the coronary arteries. This buildup of plaque is called atherosclerosis. As plaque builds up, the coronary arteries become narrow and stiff.

Blood flow to the heart is reduced. This decreases the oxygen supply to the heart muscle.

### **Types of Angina**

The three types of angina are stable, unstable, and variant (Prinzmetal's). It is very important to know the differences among the types.

- **Stable angina.** Stable angina is the most common type. It occurs when the heart is working harder than usual.
  - There is a regular pattern to stable angina. After several episodes, you learn to recognize the pattern and can predict when it will occur.
  - The pain usually goes away in a few minutes after you rest or take your angina medicine.
  - Stable angina is not a heart attack but makes it more likely that you will have a heart attack in the future.
- **Unstable angina.** Unstable angina is a very dangerous condition that requires emergency treatment. It is a sign that a heart attack could occur soon. Unlike stable angina, it does not follow a pattern. It can occur without physical exertion and is not relieved by rest or medicine.
- **Variant angina.** Variant angina is rare. It usually occurs at rest. The pain can be severe and usually occurs between midnight and early morning. It is relieved by medicine.

## **2. High Blood Cholesterol**

Too much cholesterol in the blood, or high blood cholesterol, can be serious. People with high blood cholesterol have a greater

chance of getting heart disease. High blood cholesterol itself does not cause symptoms; so many people are unaware that their cholesterol level is too high.

### **Cholesterol**

To understand high blood cholesterol, it is important to know more about cholesterol.

- Cholesterol is a waxy, fat-like substance that is found in all cells of the body. Your body needs some cholesterol to work the right way and makes all the cholesterol you need.
- Cholesterol is also found in some of the foods you eat.
- You use cholesterol to make hormones, Vitamin D, and substances that help you digest foods.

Two kinds of lipoproteins carry cholesterol throughout your body. It is important to have healthy levels of both:

- **LDL (low density lipoprotein)** cholesterol is sometimes called "bad" cholesterol.
  - High LDL cholesterol leads to a buildup of cholesterol in arteries. The higher the LDL level in your blood, the greater chance you have for getting heart disease.
- **HDL (high density lipoprotein)** cholesterol is sometimes called "good" cholesterol.
  - HDL carries cholesterol from other parts of your body back to your liver. The liver removes the cholesterol from your body. The higher your HDL cholesterol level, the lower your chance of getting heart disease.

### 3. What is blood pressure?

Blood is carried from the heart to all parts of your body in vessels called arteries. Blood pressure is the force of the blood pushing against the walls of the arteries. Each time the heart beats (about 60-70 times a minute at rest), it pumps out blood into the arteries. Your blood pressure is at its highest when the heart beats, pumping the blood. This is called systolic pressure. When the heart is at rest, between beats, your blood pressure falls. This is the diastolic pressure.

Blood pressure is always given as these two numbers, the systolic and diastolic pressures. Both are important. Usually they are written one above or before the other, such as 120/80 mmHg. The top number is the systolic and the bottom the diastolic. When the two measurements are written down, the systolic pressure is the first or top number, and the diastolic pressure is the second or bottom number (for example, 120/80). If your blood pressure is 120/80, you say that it is "120 over 80."

Blood pressure changes during the day. It is lowest as you sleep and rises when you get up. It also can rise when you are excited, nervous, or active.

Still, for most of your waking hours, your blood pressure stays pretty much the same when you are sitting or standing still. That level should be lower than 120/80. When the level stays high, 140/90 or higher, you have high blood pressure. With high blood pressure, the

heart works harder, your arteries take a beating, and your chances of a stroke, heart attack, and kidney problems are greater.

### **What is normal blood pressure?**

A blood pressure reading below 120/80 is considered normal. In general, lower is better. However, very low blood pressures can sometimes be a cause for concern and should be checked out by a doctor.

Doctors classify blood pressures under 140/90 as either "normal," or "pre hypertension."

- "Normal" blood pressures are lower than 120/80.
- "Pre hypertension" is blood pressure between 120 and 139 for the top number, or between 80 and 89 for the bottom number. For example, blood pressure readings of 138/82, 128/89, or 130/86 are all in the "pre hypertension" range. If your blood pressure is in the pre hypertension range, it is more likely that you will end up with high blood pressure unless you take action to prevent it.

### **What is high blood pressure?**

High blood pressure is called "the silent killer" because it usually has no symptoms. Some people may not find out they have it until they have trouble with their heart, brain, or kidneys. When high blood pressure is not found and treated, it can cause:

- The heart to get larger, which may lead to heart failure.

- Small bulges to form in blood vessels. Common locations are the main artery from the heart (aorta), arteries in the brain, legs, and intestines, and the artery leading to the spleen.
- Blood vessels in the kidney to narrow, which may cause kidney failure.
- Arteries throughout the body to "harden" faster, especially those in the heart, brain, kidneys, and legs. This can cause a heart attack, stroke, kidney failure, or amputation of part of the leg.

Blood vessels in the eyes to burst or bleed, which may cause vision changes and can result in blindness.

A blood pressure of 140/90 or higher is considered high blood pressure. Both numbers are important. If one or both numbers are usually high, you have high blood pressure. If you are being treated for high blood pressure, you still have high blood pressure even if you have repeated readings in the normal range.

### **(C) Objectives of the present study –**

1. To study the significant difference between Type A and Type B behaviour persons on life stress factors.
2. To study the significant difference between Good Mental Health Persons and Poor Mental Health Persons on life stress factors.
3. To study the significant difference between Normal Persons and Heart Patients on life stress factors.
4. To study the effect of types of behaviour (A & B) and types of person (Normal persons and Heart patients) on different life stress factors.
5. To study the effect of types of mental health (Good and Poor), and types of person (Normal persons and Heart patients) on different life stress factors.
6. To study the effect of types of behaviour (A & B) and types of mental health (good and poor) on different life stress factors of normal persons and heart patients.

### **(D) Hypothesis of the present study –**

1. Persons having Type A and Type B behaviour do not differ on life stress factors.
2. Persons having Good Mental Health and Poor Mental Health do not differ on life stress factors.

3. Normal persons and Heart patients do not differ on life stress factors.
4. There is no significant effect of types of behaviour (A & B) and types of person (Heart patients and Normal persons) on life stress factors.
  - a. There is no significant effect of types of behaviour (A & B) and types of person (Heart patients and Normal persons) on Anxiety as life stress factor.
  - b. There is no significant effect of types of behaviour (A & B) and types of person (Heart patients and Normal persons) on Stress as life stress factor.
  - c. There is no significant effect of types of behaviour (A & B) and types of person (Heart patients and Normal persons) on Depression as life stress factor.
  - d. There is no significant effect of types of behaviour (A & B) and types of person (Heart patients and Normal persons) on regression as life stress factor.
  - e. There is no significant effect of types of behaviour (A & B) and types of person (Heart patients and Normal persons) on Fatigue as life stress factor.
  - f. There is no significant effect of types of behaviour (A & B) and types of person (Heart patients and Normal persons) on Guilt as life stress factor.
  - g. There is no significant effect of type of behaviour (A & B) and types of person (Heart patients and Normal persons) on Extraversion as life stress factor.

- h. There is no significant effect of types of behaviour (A & B) and types of person (Heart patients and Normal persons) on Arousal as life stress factor.
- 5. There is no significant effect of types of mental health (Good and Poor), and types of person (Normal persons and Heart patients) on life stress.
  - a. There is no significant effect of types of mental health (Good and Poor) and types of person (Normal persons and Heart patients) on Anxiety as life stress factor.
  - b. There is no significant effect of types of mental health (Good and Poor) and types of person (Normal persons and Heart patients) on Stress as life stress factor.
  - c. There is no significant effect of types of mental health (Good and Poor) and types of person (Normal persons and Heart patients) on Depression as life stress factor.
  - d. There is no significant effect of types of mental health (Good and Poor) and types of person (Normal persons and Heart patients) on Regression as life stress factor.
  - e. There is no significant effect of types of mental health (Good and Poor) and types of person (Normal persons and Heart patients) on Fatigue as life stress factor.
  - f. There is no significant effect of types of mental health (Good and Poor) and types of person (Normal persons and Heart patients) on guilt as life stress factor.
  - g. There is no significant effect of types of mental health (Good and Poor) and types of person (Normal persons and Heart patients) on Extraversion as life stress factor.

h. There is no significant effect of types of mental health (Good and Poor) and types of person (Normal persons and Heart patients) on Arousal as life stress factor.

6. There is no significant effect of types of behaviour (A & B) and types of mental health (good and poor) on life stress of normal persons and heart patients.

- a. There is no significant effect of types of behaviour (A & B) and types of mental health (good and poor) on anxiety as life stress factor of normal persons and heart patients.
- b. There is no significant effect of types of behaviour (A & B), and types of mental health (good and poor) on Stress as life stress factor of normal persons and heart patients.
- c. There is no significant effect of types of behaviour (A & B) and types of mental health (good and poor) on Depression as life stress factor of normal persons and heart patients.
- d. There is no significant effect of types of behaviour (A & B) and types of mental health (good and poor) on Regression as life stress factor of normal persons and heart patients.
- e. There is no significant effect of types of behaviour (A & B) and types of mental health (good and poor) on Fatigue as life stress factor of normal persons and heart patients.
- f. There is no significant effect of types of behaviour (A & B) and types of mental health (good and poor) on Guilt as life stress factor of normal persons and heart patients.

- g. There is no significant effect of types of behaviour (A & B) and types of mental health (good and poor) on Extraversion as life stress factor of normal persons and heart patients.
- h. There is no significant effect of types of behaviour (A & B) and types of mental health (good and poor) on Arousal as life stress factor of normal persons and heart patients.

#### **(E) Importance of the present study –**

Paradoxically, not all research evidence consistently shows a strong clear link between Type A behaviour and coronary heart disease. Some research suggests that men who fit the Type A pattern may be more likely to survive a second heart attack than men fitting the Type B pattern-even though the Type A men more likely to have an initial heart attack (Ragland 1988). In light of such puzzling evidence, a small minority of researchers goes to far to claim that the relationship between Type A and Type B behaviour and coronary heart disease is illusory (Fishman, 1987).

However, most researchers argue that at least a modest relationship exist between the two factors, although certain components of Type A behaviour seem to be more closely associated with coronary heart disease than others. The hard driving, hostile and competitive aspects of Type A personality are major factors in coronary heart disease; Impatience in completing tasks seems less important

More important, even if a casual link between Type A behaviour and coronary heart disease exists, people may be able to learn to change from their A behaviour to B behaviour and as a consequence, decrease their risk of heart disease.

The research also useful to find out the relation between stresses mental health as the causes for CHD (Coronary heart diseases). Most recent research shows that stress and mental health of old age person also play a vital role in their diseases. But the stress and mental health is often dependent own their natural and social environment so CHD cannot be a causes of these types factor. But by this research we can see this truth that these factors are support or not in CHD disease in old age person.

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## Chapter -II

# *Review of Related Studies*

## Review of related studies

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*Roseman, 1976* do a major eight year study of some 3000 men who were diagnosed as being free of heart disease and has as having type A pattern found that they developed coronary heart disease twice as often, suffered significantly more fatal heart attacks and reported five times as many coronary problems as those classified as having type B pattern.

*Bashu and Saha (1985)* used the Jenkins Activity Survey (Jenkins, 1970) to identify Type A behaviour among middle aged myocardial infarction patients. Patients with coronary heart disease (CHD) scored significantly higher on Type A indicators, including speed and impatience compared to men free from coronary disease.

*Mathews & Haynes (1986)* objective interview showed a stronger relationship to risk of developing coronary disease as opposed to previously used scales which relied heavily on a subjects' self report of their own behaviour.

*Agrawal and Naidu (1988)* provided the explanations that undesirable events may adversely affect self-concept and social image of the individual, impairing the capacity to cope with life stressors.

**Srivastava and Sinha (1989)** administered the Hindi adaptation of the control medical index health questionnaire to males and females from middle class Hindu families. The findings revealed that the relationship between stressful events of the past year and symptoms of emotional distress was stronger than that between life time events and emotional distress.

**A. K. Singh and Thapa (1989)**, studying hospitalized coronary heart disease patients, did not find these patients to be right on type A measure.

**Khorana (1989)** studied patients of heart disease and a control group (with no heart problem). Reactions to serve psychological stressors like financial pressures, family problems and death of loved ones greatly influenced the onset of the disease.

**Bhatia, Tiwari, Balkrishna and Gupta (1990)** studied patients with a week of hospitalization. Type A behaviour was noted in 72 percent of CHD patients.

**Ghulam, Gupta, Bandyopadhyaya and Mishra (1990)** also observed that coronary heart disease patients scored highr on Type A behaviour. In this study, Type A behaviour pattern was not significantly correlated with age, gender or parental history of heart disease.

**Kaushik, Mukhopadhyay, Sheik and Goel (1991)** also conducted a similar study on male and female coronary heart

patients and a comparable control group. It was reported that for both male and female patients. Type A behaviour was an important precipitating factor, though female patients were more influenced by Type A behaviour pattern than male patients.

*Lepore, Evans and Palsane (1991)* examined the hierarchy of stressors varying from routine daily hassles to tragic events. They noted that chronic stressors like poverty, unemployment, living in slums and crowding has greater negative impact on health status than daily hassles. Most of the stress studies involving the general population have reported low to moderate correlations between stress and strain (mental and physical health).

*Chadha, Aggrawal and Mangla (1992)* assessed the psychological health of widowed elderly male and female subjects and found significant difference between male and females, with male scoring highly on life satisfaction than female.

*Dubey, Neeraj, Agrawal, Aruna, & Singh, V. K. (1992)* explores the relationship between anxiety index and present age of patients by applying the asymptotic regression curve to 120 cases of coronary heart disease aged 40-74 years. The curve illustrates the exiting relationship between these two risk factors of CHD. It is found that anxiety index decreases as age increases.

*Bhaduri, S., & Chattopadhyay, P. K. (1994)* examines the role of stressful life events in genesis of pain by comparing functional pain (FP) patients with organic pain patients (OP), psychiatric patients (PC) and matched normal controls (NC).

Results shows that FP group obtained significantly higher scores on all stressful life events and adjustment variables compared to the NC group. Apart from health adjustment, the FP group obtained significantly higher scores on all variables than the OP group. The FP and PC groups did not differ significantly on any of the stressful life events and adjustment variables; they appeared to have a similar pattern of scores on all the variables tested.

**Rathee, S. P., Goel, D. S., Chawla, M. L., Saldanha, D. et al. (1994)** compares the performance of 75 coronary heart disease and 75 normal Ss matched on age (30-55, years), sex, education and sociocultural background on the somatic inkblot series. Result reviled that the coronary Ss gave a low number of responses, unhealthy somatic imagery, low typical responses with rejection of more images than normals thereby indicating that SIS.

**Srivastava and Gupta (1994)** examined the impact of age on life stress and personality adjustment. A sample of 150 subjects was selected from Indian drugs pharmaceuticals limited. Rishikesh and divided into two groups, Group A (aged 35-49) and group B (50-60 aged). The results showed significant difference between the two groups on life stress and also found that highly stressed group were highly maladjusted than less stressed in both age groups.

**Srivastava, S. K., & Gupta, Anshika (1994)** examines the impact of age on life stress and personality adjustment among aged persons. A sample of 150 Ss males and 34 females. The six reaction categories were: anger, anxiety, depression,

helplessness, disengagement, and rationalization. Dominant reaction categories were same in both male and female patients, yet males and females differed significantly on magnitude of reaction to four of the six reaction categories. Male patients exhibited less anger and anxiety than female patients, but were higher on disengagement and rationalization.

*Mittleman et al. (1995)* compared patient's activities immediately before the occurrence of an MI with their usual levels of activity to asses the immediate physical and mental triggers on of onset of MI. In the study, patients were interviewed a median a four days post-MI and 2.4% reported as episode of anger prior to onset of MI.

*Sandhu (1995)* examined difference in need satisfaction among the aged living with their families and those living above. The results indicated that subjects living with their families were noticeably different from those living alone and scored higher on acceptance and cooperation. Feelings of isolation and rejection were more among the aged living alone as compared to those living with their families.

*Shukla, Punam Rani (1995)* A sample of 60 patients with coronary heart disease aged (35-65 years) was administered the Indian adaptation of the Eysenck personality inventory. Findings reveal that (a) male and female CHD patients manifested neurotic personality in comparison to the standardised population but did not differ from the population norm on the extraversion-introversion dimension, (b) no sex differences were observed on the

dimensions of extraversion-introversion and neuroticism, and (c) Ss with angina and acute myocardial infarction showed no significant difference on the 3 personality dimensions. It was observed that CHD Ss manifested neurotic personality, developed neurotic symptoms under stress, and were emotionally over responsive.

*Goyal, Shashi (1997)* studied the stressful life events of 220 women (age 40 to 55 years); 110 women were attending the OPD at the hospital with some gynecological complaints and 110 women from the general population. Finding's reveal that daughter's marriage and financial problems were the most important events contributing to their anxiety and depression. The clinical group scored higher than the non-clinical group in reporting the factors contributing to their anxiety and depression.

*Nathawat, S. S., & Joshi, Uma (1997)* examines the effects of hardiness and Type A personality on the perception of life events and psychological well-being. Type A behaviour, life events, and psychological well-being were administered to 276 catholic nuns. Results indicate that subjects high on hardiness perceived their life events more positively than those low on hardiness. Type A and Type B subjects, however, did not differ significantly in their perception of life events.

*Basu, Ranjit, & Neogi, Susmita (1999)* examines the possible association of psychological variables and coronary heart disease. The sample consisted of 617 male of which 313 cases had abnormal ECG, and 304 subjects with normal ECG served as

controls. Results reveled that normal subjects did not differ significantly from those with abnormal ECG with regard to their scores on Type A behaviour pattern and successful events. Compared to individuals suffering from cardiovascular diseases, normal subjects and greater ability to resole life conflicts.

**Wulsin, Vaillant, & Wells, (1999)** these and other findings have enabled the medical community to label depression as the most prevalent and epidemiologically relevant psychological risk factor for cardiovascular disease.

**Praveen, Asma, Khan, Mahmood S., & Barket, Shaikh Abul, (2000)**, examines the difference in the degree of death anxiety among heart patients and normals. Statistical analysis revealed that all categories of heart patients experienced significantly higher death anxiety than normals. However among the heart patients, those with 2 myocardial infarction episodes experienced the least death anxiety.

**Sehgal, Meena (2000)** assesses the role of anxiety, anger, hostility, irritability, and Type A behaviour in causing essential hypertension and coronary heart disease. Results reviled that anger was found to be a cause of chronic diseases far more than anxiety.

**Tung, S., & Verma, P. (2000)**, Investigates familial influences on Type A behaviour pattern in a sample of 101 male and 99 female students. He observed that Type A behaviour in females was a function of father's education while in males it was

influenced by mother's education and joint family system. Also there were significant gender differences on Type A scores.

*Latha, & Suresh, A (2002)* explores awareness about coronary risks, attitude towards coronary disease, and its rehabilitation and health related practices among 466 adults. Results shows that factors such as age, educational level, and income influenced awareness, attitudes and health concerns, subjective perception of health and specific lifestyle factors predicted the knowledge, attitude and practices pertaining to coronary artery disease.

*S, Priscilla, Paul Eldho and Cherian KM, 2002* studied to identify the risk factors prevailing before the onset of coronary artery disease in post-coronary artery bypass graft patients. The study sample consisted of 167 patients in which 147 men and 20 women who underwent CABG. The age group of the patients ranged from 28 to 64 years, with the mean age of  $51.5 \pm 6.0$  years. Result reviled those certain psychological risk factors like sleep disturbance, anxiety and depression to be the predominant factors prevailing the onset of the coronary artery disease.

*Carels, Robert A. (2004)* research examine the impact of disease severity, functional status, and level of depression on daily quality of life in Congestive heart failure (CHT) patients. Research reveled that depressive symptoms were positively associated with a number of quality of life indices (i.e. physical and emotional quality of life, social support and conflict, mood, and coping

behaviour). Left ventricular ejection fraction and functional impairment has a much weaker association with quality of life.

*Ciardullo, A. V.; Azzolini, L.; Bevini, M.; Cadioli, T. et al. (2004)* objective, left ventricular hypertrophy is an independent cardiovascular risk factor in both periphery. 4250 samples were taken age range between 40 to 69 years. Cross-sectional frequencies and age- and gender-adjusted statistical differences have been calculated. Results show that all the study variables were significantly worse for 'LVH' than 'non-LVH'. The LVH had both a mean '5-year CV risk' significantly greater than 'non-LVH' individuals, and a significantly higher prevalence of a '5-year CV risk > 15%.

*Deo, Alka K. (2004)* tests the extents of student's stress. A sample of class XII students completed the TABP students scale and students stress scale. Results of study reviled that female students experienced almost the same amount of stress as male students. The students of arts faculties encountered the maximum amount he stresses. TABP in students was positively associated with stress. Results are interpreted in the context of Indian culture and the theoretical relationship between TABP and stress.

*Owen, Dawn M.; Hastings, Richard P. (2004)* explored the putative association between exposure to negative life events and psychological well-being in adults with developmental disabilities. Results shows that residents had typically been exposed to between three and four negative life events mainly relating to

staffing and residence changes, conflict, family environment and relationships and illness or injury.

**Sayers, Steven L. (2004)** - Co-occurrence of two highly common disorders, depression and coronary heart disease (CHHD), has been focus of research. Their relationship is highly complex, with depression implicated in the initial development of heart disease as well as a likely result of the burden of this chronic illness. The casual pathway is not one-way, with certain critical cardiac incidents, such as a myocardial infarction, leaving patients more vulnerable to depression. Thus depression and heart disease are highly intertwined, requiring a careful conceptualization when co morbid. The implication of depression for heart disease in older adults is especially important, given that older adults have an ever-increasing risk of heart disease and cardiovascular diseases, with an emphasis on CHD and congestive heart failure (CHF).

**Seery, Mark D.; Blasecovich, Jim; Weisbuch, Max & Vick, S. Brooke. (2004)** Examined the notion that individuals with unstable high self-esteem possess' implicit self-doubt. Study revealed predicted interactions between feedback condition, self-esteem level, and self-esteem stability, such that participants with unstable high self-esteem exhibited relative threat in the failure condition, whereas those with stable high self-esteem exhibited relative challenge.

*Sumanen, Markku; Koskenvuo, Markku; Immonen-Raiha, Suominen, Sakari et al. (2004);* evaluate risk factors related to secondary prevention of working age CHD patients. Results found CHD patients still smoke, are obese and suffer hangovers more frequently than the control population.

*Tanaka, S.; Togashi, K.; rankinen, t.; persusse, L. et al. (2004)* investigate the relationships between abdominal fat and risk factors for cardiovascular disease among normal weight subjects and to determine how these relationships differ to sex. Risk factor included systolic and diastolic blood pressure. Results revealed that Non weight female adults, abdominal visceral fat area assessed by computed tomography was significantly correlated with all risk factors, except for fasting glucose, even after age, study cohort, and fat mass were taken into account. Non-weight subjects with at least one risk factor had a significantly higher abdominal visceral fat than those without risk factors, although the difference was small.

*Vera-Villarroel, Pablo E.; Sanchez, Ana I. & Cachinero, (2004)* search the type A behaviour pattern construct has been considered as a risk factor for coronary heart disease. The results indicate that the TABP is not entirely related to fear of negative evaluation (FNE). However, analyses by components do show significant relationships, and differences are found between men and women, as well. In male subjects, result finds negative relationships between FNE and the competitiveness variable, and positive relationship between FNE and the variables for excessive

workload, impatience and hostility. In female subjects, there are positive relationships between FNE and impatience and hostility.

*Wulsin, Lawson R. (2004)* examines systematically the status of the current evidence for and against depression as an independent major risk factor for Coronary disease. Result find that the evidence for depression as coronary disease risk factor is good for four criteria; strength of association, prediction, consistency and dose-response effect.

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# Chapter -III

## *Methods & Procedures*

## Methods and Procedure

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The method and procedure is an important phase of research design of the study. It has prime importance in solving any research problem. The methods and procedure of the study have been explained with the regard of following titles.

- (a) Population
- (b) Sample
- (c) Research Design and Variable
- (d) Tools of the Present Study
- (e) The Collection of Data
- (f) The Statistical Technique

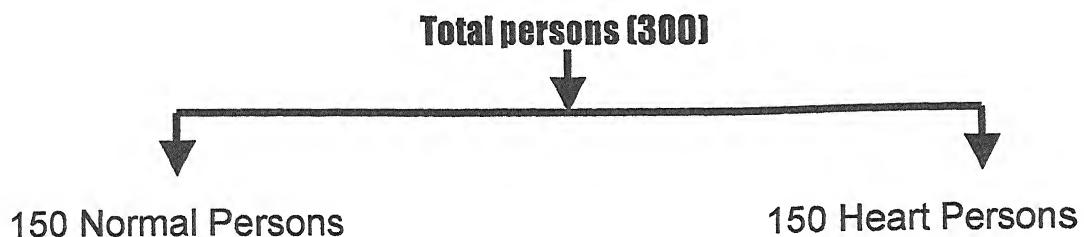
### **(a) Population –**

The present study was conducted on Normal persons and Heart Patients of Distt. Jalaun (U.P).. Distt. Jalaun is divided in five tehsil named - Orai, Konch, Kalpi, Jalaun and Madhogarh so the population is collected from these areas.

### **(b) The Sample –**

In the present study 300 persons (150 Normal Persons and 150 Heart Patients) were selected through purposive sampling technique. The study was confined to the population in the age range of 45 to 65 years. A schematic break up of the sample is shown here.

### Classification of Sample



### **(c) Research Design and Variable –**

‘ The aim of present study is to understand the effect of type A and Type B behaviour pattern and mental health on life stress factors of normal persons and heart patients. The present study is exploratory nature in which the independent variables have already occurred and researcher starts with the observation of dependent variables. The independent variables studied in respect of their possible relation and effect on dependent variables. Consequently an ex-post facto research design was considered for present study.

**According to H. E. Garrett** - “Variable are attributes or qualities which exhibit difference in magnitude and which they along some dimension”.

#### **1. Independent Variable –**

**J.C. Townsend** – “An independent variable is the factor manipulated by experimenter in his attempt to ascertain its relationship to an observed phenomenon.”

**A. L. Edwards** – “ The variable over which the investigator has control is called independent variable.”

**Rathus** - “Independent variable is a condition in a scientific study that is manipulated so that its effects may be observed”

**D. Amato** - "In general, then an independent variable is any variable manipulated by experimenter, either directly or through selection order to determine its effects on a behavioral measure (dependent variable)"

"The antecedent conditions that the experimenter manipulates freely are called the independent variable."

In the present research problem independent variables are –

- Type of behaviour (A & B)
- Mental Health (Good & Poor)
- Type of persons (General and Heart Patients)

## 2. Dependent variable –

The phenomenon, which we use to explain and predict, is the dependent variable. These variables are called dependent variable because they depend upon the occurrence of particular antecedent conditions. In experimental enquiry we manipulate the antecedent conditions in order to discover the ways in which they determine the dependent variable.

**Townsend** - "A dependent variable is that factor which appears, disappears, or varies as the experimenter introduces removes as varies the independent variable."

**D. Amato** - "Any measured behavioural variable of interest in a psychological investigation is called a dependent variable."

In the present research problem dependent variables are –

- Life Stress

### **[d] The Tools used-**

According to John - "Skill in choice and use of research instrument is curtailed to the success of the study and the validity and conclusion."

In order that the present study should yield fruitful results, the various relevant tools were surveyed. The following tools were selected and tested.

#### **1- Mental Health Scale**

By: Dr. Taresh Bhatia & Dr. S. C. Sharma

#### **2- A B B P (A B Behaviour Pattern Scale)**

By: Upinder Dhar, Manisha Jain

#### **3- 8 state Questionnaire**

By: Sh. Malay Kapoor and Dr. Mahesh Bhargava

#### **1- Mental Health Scale (MHS)-**

Dr. Taresh Bhatia and Dr. S.C. Sharma developed the present scale for measuring different mental health areas of an individual. The present scale measures five important areas of an individual's mental health. To make a scientific selection of the areas of mental health, 10 relevant and meaningful areas of mental health were taken. These 10 areas were given to five experts in the field of psychology, for approval. The total number of areas over which the experts were unanimous was five and they were retained for the final form of the scale. These areas were -

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**(a) *Realistic (REA)* -**

The ability to appraise oneself realistically and to take a realistic approach to situations, the ability to evaluate one's achievements realistically.

**(b) *Joyful living (JFL)* -**

One of the outstanding characteristics of the person is Joyful living. A happy person is a young, healthy, well-educated, well paid, extroverted, optimistic, worry free, religious, married person with high self-esteem, high job morale, and modest aspirations of either sex and of a middle range of intelligence.

**(c) *Autonomy (AUT)* -**

Closely related to acceptance of responsibility is autonomy. One who trusts and depends on his own capacities to organize and interpret the data of his experience. He freely steers his own course (Barrett Lennard 1962). In decision-making, he is able to make important decisions with a minimum of worry, conflict, advice seeking and other types of running - away behavior (Kent 1966).

**(d) *Emotional Stability (ES)* -**

Emotional stability indicates an individual, who is with full control over his emotional expression, emotionally mature, stable, possessing ego strength.

**(e) *Social Maturity (SM)* -**

The progressive improvement brings in social maturity through directed activity of the individual. In comprehension of the social heritage and the formation of flexible conduct patterns of reasonable conformity with this heritage.

### **Item Analysis -**

It was decided to write 15 to 20 items under each of the five areas. In this way an initial pool of 85 items was ready for the entire scale. The scale was administered to the subject of a sample of 250 students (Male and Female) for the purpose of item-analysis. The age range of the subjects was 15 to 21 years. Employing 27% upper and 27% lower criterion group's item analysis was done. Discriminative values were computed for item selection and applying 't' test for each item. All the statements were then arranged in descending order of their 't' values. Researcher selected the first 50 items with the largest 't' value for the final scale out of which each area had 10 items.

### **Reliability -**

The co-efficient of reliability was determined by test - retest method. The test was administered twice with a time interval of 45 days to a sample of 200 subjects. The test-retest reliability coefficient for each area of the scale was found to range between 0.78 to 0.85.

### **Validity -**

The validity of the scale was established with the help of content validity on the basis of internal consistency.

**Administration** – It is a self-administrating scale. There is no time limit for answering it. However, most of the groups should finish it in about 15 minutes. It should be emphasized that there is no right or wrong answer to the statement.

### **Norms -**

A qualitative description of the scores obtained on different areas can be interpreted with the help of norm table.

### **Scoring Key -**

It is a five-point scale, the scoring of which has been objectified by assigning five to one scores respectively for five alternatives of the positive items rated strongly agree to strongly disagree. For the negative items the scores assigned to each alternatives have been reversed. They range from one to five for five alternatives i.e. positive statement assigned from 5 to 1 but negative statement assigned from 1 to 5. Negative statements are 4,5,6,7,10,14,15,19,20,24,25, 29,33,34,39,44,48,49 in present scale.

### **(2) A B behaviour pattern scale (A B B P S) -**

#### **Introduction:**

The type A was originally evaluated by Friedman and Roseman (1974) through a structured interview method. IN this procedure, the interviewer not only asks persons about their behaviour but also observes and elicits behaviour in the actual situation. The respondent's style of speaking – how fast or explosive it is, respondent's reactions to pauses by the interviewer and some other behavioural characteristics are noted and recorded as part of the assessment. Bortner rating Scale (1967) and Jenkins Activity survey (1979) is also the tools for assessing behaviour pattern. Behaviour pattern can also be measured by Framingham Type A scale (1980) and Gmelch's (1982) "Can you type your behaviour". The present work was undertaken to develop a measure for Type

A/B behaviour pattern in Indian context. Unlike other scale, this scale has two parts – form A and Form B to measure Type A and Type B behaviour pattern separately, because if a person scores high on Type A, it does not mean that he is not having any characteristics of Type B personality. There is a possibility that along with Type A characteristics he has some of the characteristics of Type B personality because most of the personalities have some of the characteristics of both the personality types. In other words, their personalities are mixture of Type A and Type B personalities. So it is necessary to measure both the personality types separately, so that it could be determined that how much of both the personality types a person is having. One may be oriented more towards a particular type, but may have some characteristics of other type too.

#### **Development of scale:**

After reviewing relevant literature and consulting some experts, 36 items were developed and presented in the form of a 5 point scale. The scale was administered on a sample of 200 working people. After data collection, it was felt that it is not necessary that if one person is high on Type A will necessarily be low on type B behaviour pattern. He may be high or low on both the patterns equally, so it was decided to develop separate forms for measuring each of the behaviour patterns. After item-total correlation, 3 item were dropped, 1 from form A and 2 from form B. The final form of the scale constituted 33 items, 17 items in form A and 16 items in form B. The Hindi version of scale was also developed by getting the translated items evaluated by 10 judges who were well versed with both the languages, Hindi as well as English.

### **Reliability:**

The odd-even reliability of both the forms of the scale was determined by calculating reliability coefficient, correlated for full length for a sample of 200 subjects. The reliability coefficient of form A was found to be 0.54 and coincidentally for form B also it was found to be 0.54

### **Validity:**

As all items in the scale are concerned with the personality types, the scale has high content validity, besides face validity. Judges/Experts also assessed that items of the scale were directly related to the concept of personality types. The reliability index was calculated to find out the validity from the coefficient of reliability and it was found to be .73 for both the forms separately. The reliability index is considered to be a measure of validity (Garret, 1966).

### **Norms:**

Norms of the scale are available on a sample of working population. These norms considered as reference points for interpreting the Type A and Type B behaviour patterns. It is always better to develop norms based on a particular sample. Individuals with very high scores on form A may be considered as Type A personalities and individuals having very high scores on form B may be considered as Type B personalities.

### *Norms for interpretation of Raw Score*

|                           | <b>Form A</b> | <b>Form B</b> |
|---------------------------|---------------|---------------|
| <b>Mean (M)</b>           | 53.05         | 51.97         |
| <b>Standard Deviation</b> | 6.70          | 6.22          |
| <b>Normal Range</b>       | 46-60         | 46-58         |
| <b>High</b>               | 61 & above    | 59 & above    |
| <b>Low</b>                | 45 & below    | 45 & below    |

#### **Uses for the scale:**

This scale can be used for research and survey purposes and for individual assessment as well. It is a self administering scale and can be administered without the help of highly trained tester. It is extremely suitable for group as well as individual testing.

#### **Limitation of scale:**

In this type of tests, subjects can manipulate their responses according to the purpose. So, there is always the factor of "social desirability and akin". The scale should not be used as a tool for individual diagnosis unless supported by other evidences.

#### **Instructions for administration and scoring:**

1. The instructions printed on the scale are sufficient to answer the questions that are asked.
2. There is no time limit for completing the scale. However, most respondents take about 10 minutes to complete both the forms.
3. Before administering the scale, it is always better to emphasize verbally that responses should be checked as quickly as possible and sincere cooperation is desirable for

the same. The respondents should be told that results of the scale will be helpful in self-knowledge and in gaining insight over their behavioral and the responses will be kept confident.

4. It is necessary to make clear to the respondents that there is no right or wrong answer to the statements.
5. It should be emphasized that no statement be left unanswered; all statements have to be responded.
6. It is not desirable to tell subjects the exact purpose for which the test is used.
7. Through the instructions are given on the scale and scale is self-administering, it has been found useful to read out the printed instructions to the subjects.
8. It is convenient to undertake scoring manually; hence no scoring key is provided.
9. Each statement should be scored 5 for strongly agree, 4 for agree, 3 for uncertain, 2 for disagree and 1 for disagree.
10. Sum of scores of form A and form B yields Type A score and Type B score respectively.
11. For interpretation follow the table score.

#### **Interpretation of Type A – Type B behaviour:**

1. An individual having Type A and Type B behaviour within the normal ranges does not demonstrate distinct tendency for either of the types. He may sometimes behave typically like a type A person, where as behave typically like a Type B person on other occasions.
2. An individual having Type A score within normal range and Type B score below normal range is a clear Type A person.

3. An individual having Type B score within normal range and type a score below normal range is a clear type B person.
4. An individual having either Type A or Type B score above normal range or other score within normal range can be considered Type A and Type B on the basis of higher score.
5. An individual having Type A and Type B scores either below normal range or above normal range does not demonstrate distinct tendency for either of the types. Such an individual is likely to behave typically like a Type A or Type B on different occasions.
6. An individual having either Type A or Type B score above normal range and other score below normal can be considered Type A or type B on the basis of higher score.
7. Another utility of the scale is that an individual's profile can be expressed in terms of eleven independent factors, which have emerged out of the Type A and Type B behavioral pattern. We may not necessarily label a person in terms of Type A or Type B, but may represent him in term of eleven factors only. An individual is expected to be either high, low or within normal range on each of the eleven factors.

### (3) Eight State Questionnaires (8SQ) –

#### **Introduction –**

The eight state questionnaire (8SQ) was designed specially for measuring eight important emotional states and moods. The theoretical importance of measuring emotional states lies in the fact that any prediction of how a person will act or how he will perform depends as much on his present state on his usual trait. An alert

individual of average intelligence May perform better on an intellectual task than a tired genius. The practical importance of good state measures is evident in such areas as drug research, studies of morale, evaluation of classroom, conditions, directing a course of therapy, etc.

Both forms of the 8SQ contain 96 items, 12 of which measure each state. The test may be administered individually or in a group. The test was constructed to be used with adults and adolescents of approximately 16 years of age or above. As to educational level, it uses "newspaper" English and demands about an eight-grade reading comprehension level. It is not designed, as sub-groups unassimilated into the American culture. On the other hand, a deliberate choice of language has been observed to make the test equally appropriate for various English-speaking groups such as the British and Australians.

Hindi version of the 8SQ will be developed in India by Sh. Malay Kapoor & Dr. Mahesh Bhargava.

#### **Applicability and Scope –**

The purpose of the 8SQ is to present a multi-state battery of the widest spectrum possible at the present state of research. In many types of situations, it is desirable, first, to explore reactions over a sampling of mood states. Then, after this initial "mapping out", the test user may wish to concentrate on just one state, for example, the one that proves to be most affected. However, prematurely restricting observation to a single state on the basis of what is expected to be relevant may hide other important relationships.

The 8SQ can be used to assess an individual's or a group's emotional reactions to different environment conditions or to changes in environmental conditions. As such, it has a multiplicity of uses limited only by the imagination of the test user. Below is a sample of possibilities –

1. For Pharmaceutical companies
2. For Psychiatrists
3. For Educators
4. For Industrial Firms
5. For Clinical Researchers
6. For Social Scientists

#### **Development of scale –**

Curran and Cattell coordinated the development of the 8SQ, from 1968 to its present form, although many others assisted in the research development. The present forms are based on the results of over ten separate factor-analytic studies. A large item pool was generated and numerous item analyses were conducted in order to select maximally valid items. This research continues ad refinement of some of the test items would not be unexpected in the course of time.

An individual's score on each of the eight scales is based on twelve items per form. To avoid spurious "contiguity" correlations and reactive inhibition effects, the items are "cycled", i.e. a sequence of items all concerned with the same state is not allowed to occur. The construction design also insured that as many left-hand (true) as right-hand(false) items contributed to the total scale on any one state to avoid a response set. Whenever possible, an attempt has been made to bring in some suppressor action, i.e., since some items load more than one factor, to arrange for the

items scoring on one factor to have balanced positive and negative loading on other, unwanted factors.

Other principles used in the construction of the 8SQ were [a] to use four alternative responses, thereby preventing the subject from making the "lazy" choice of a middle category if only three options were presented; [b] to keep the frequency of choices of the four alternatives approximately in a normal distribution for most items, with a few showing a predominance of more extreme responses; [c] to avoid more "face validity" than is inescapable by finding items which load sufficiently on the state factors but are not too obvious and therefore fakable; and [d] to select items of predominantly state quality rather than trait quality.

#### **Description of the States measured by the 8SQ**

##### **\* (Behavioural Correlates in objective test domain)**

**Anxiety** - Worried, easily rattled, tense emotionally upset, easily angered, high-strung, and easily annoyed. \* More common frailties admitted greater tending to agree, less confident of skill in untried performance, fewer questionable reading preferences, higher susceptibility to embarrassment, and lower accuracy in checking numbers.

**Stress** - Feeling a lot of pressure, unable to take time off and relax, constantly on the go, feeling hectic, experiencing great strain, unhappy with own performance, expiring lots of demands. \* Low motor perceptual rigidity, better at memorizing meaningless material, high ratio of threatening objects seen in unstructured drawings.

**Depression** - Unhappy, disagreeable, pessimistic in poor spirits, disappointed. \* Poorer at memorizing meaningful

material, low ratio fluency regarding self relative to other topics.

**Regression** – Confused, Unorganized, unable to concentrate, experiencing difficult coping, acting impulsively. \*Greater suggestibility, lower ratio of accuracy to speed, lower accuracy in spatial judgment, poorer two hand coordination, higher score on neurotic symptom checklist, lower speed of Gestalt closure.

**Fatigue** – Exhausted, no energy, sluggish, tired, needing rest, weary, below par in performance. \*Greater variability in accuracy, rapid reversible perspective.

**Guilt** – Regretful, Concerned about own misdeeds, experiencing difficulties sleeping, unkind, and dissatisfied with self.

**Extraversion** – Sociable, Outgoing, adventuresome, talkative, enthusiastic. \*Greater number of objects perceived in unstructured drawings, less tendency to agree, less authority submission, more confident assumption of skill in united performance.

**Arousal** – Alert, Keyed up, excited, stimulated, keen and sharp senses.

#### **Direction for administration –**

The 8SQ can be administered to an individual or to a group. The simple and clear instructions printed on the cover page of the test booklet make the 8SQ virtually self administering. After examine has read the instructions, the administrator should answer any questions that may arise. The administrators should also reinforce the state quality of the test by the comment, "remember

you are being asked to make the answer that tells best how you feel now, at this moment."

Answers should be marked on the separate answer sheet and not in the reusable test booklet, except when an examinee is confused by the answer sheet. The examiner should make certain the examinee fills in necessary identification information and understands how to use the answer sheet.

If the examiner occasionally considers it desirable to read the instructions aloud with the examinee and discuss certain points. In order to be sure the examinee understands what is required, this practice is permissible. In each situation the examiner must be the judge of the best way to get the instructions across to the examinee.

Although there is no time limit, it is convenient to have certain expectations. The average time for completion is 25-30 minutes for one form. About 20% of the examinees can finish in less than 25 minutes, while about 20% of the examinees will take more than 30 minutes. The examiner may encourage those who appear to be working too slowly to increase their pace.

#### **Scoring Instruction -**

Each question on the 8SQ has four options and is scored with 0,1,2,3 for negative and 3,2,1,0 for positive items. The score of each item contributes to only one factor total. Since there are 6 items per state on each form, the highest possible raw score per form is 18 (for the two forms, 36). Each form has 8 states with 6 items in each state. Add the scores separately for positive and negative state factors and at the end enter the total of each state (negative and positive) the space indicated at the bottom of the sheet.

Before scoring, quickly examine each answer sheet to make sure that there are no unscorable responses, e.g. marking more than one alternative or not marking any choice at all, if such errors do occur, the examinee, if still present, should be asked to redo the affected items correctly.

If this is impossible for any reason, and the sheet must be scored, a full-scale score may be estimated for any affected scale by (1) obtaining the scores from the items in that scale, which have been correctly answered. (2) Multiplying that score by the total number of items in that scale, (3) dividing this result by the number of items answered, and (4) rounding the answer to nearest whole number.

Scoring pattern for the eight state questionnaires.

| Sr. No. | Scale        | Total Items | Positive Items    | Negative Items    |
|---------|--------------|-------------|-------------------|-------------------|
| 1       | Anxiety      | 12          | 9,33,49,57,81,89  | 1,17,25,41,65,73  |
| 2       | Stress       | 12          | 2,18,26,50,66,74  | 10,34,42,58,82,90 |
| 3       | Depression   | 12          | 11,19,43,51,59,83 | 3,27,35,67,75,91  |
| 4       | Regression   | 12          | 28,44,60,68,76,92 | 4,12,20,36,52,84  |
| 5       | Fatigue      | 12          | 5,21,45,53,77,93  | 13,29,37,61,69,85 |
| 6       | Guilt        | 12          | 6,22,30,46,54,70  | 14,38,62,78,86,94 |
| 7       | Extraversion | 12          | 15,23,31,39,87,95 | 7,47,55,63,71,79  |
| 8       | Arousal      | 12          | 8,16,48,56,64,88  | 24,32,40,72,80,96 |
| Total   |              | 96          | 48                | 48                |

## Norms -

Before raw scores can be evaluated and interpreted, they must be converted into a system which places the examinee's score in relation to scores obtained by other people in some defined population.

The conversion of raw scores to standard scores presents more theoretical problems with states than with traits. Briefly stated, the problem is as follows. If real difference in mean state level exist, on, say, anxiety, between ABC and XYZ, the former fluctuating about his mean level of 13 points and the latter about a central tendency of 17, then on a day when both happen to have a score of 18, XYZ is barely above his average anxiety level whereas ABC is, for him, in a decidedly anxious state. Furthermore, ABC's standard deviation about his mean may be only 2 whereas XYZ's 4. Taking this into consideration ABC, at 18, is  $2 \frac{1}{2}$  standard deviations above his mean whereas XYZ is only  $\frac{1}{4}$  above his, for the same raw score. At least this is the meaning in terms of "within person" standardization, if that is what one decided to use. Although the statement of the problem is simple. Because of his extremely complex nature of "within person" standardizations and the technical problem involved. The standardization of the 8SQ at the present time rests on between-person comparisons.

## [e] The Collection of Data -

The subjects of the present study were selected from the prescribed population. The Normal persons were selected in general public but Heart patients were selected from Doctors (Heart specialist), Medical Stores, Ayurvedic Medicine shop and Vaidhya.

The selected persons were administered three tests and requested to answer the questions sincerely and truthfully. They were assured that the responses would be kept confidential.

### **[f] The statistical technique used –**

The first purpose of the present study was to compare the life stress factors of Type A and Type B behaviour persons, Good Mental Health and Poor Mental Health Persons and Normal Persons and Heart Patients. Mean and Standard Deviation of each group were calculated. The comparison between different groups was made of the basis of critical ratio with 0.05 and 0.01 level of confidence considered significant. Hypothesis no.1 to 3 were tested by applying critical ratio.

Another purpose of the present study was to find out the effect of Types of behaviour (A and B), Types of Mental Health (Good and Poor) and Types of person (Normal Persons and Heart Patients) on different life stress factors, for this two way Analysis of Variance was calculated.

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# Chapter -IV

## *Data Analysis & Discussion*

## Data Analysis and Discussion

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This chapter presents the data, its analysis, interpretation and results. The results have been presented according to the following scheme.

**Part A** – Overall comparison of Type A and Type B behaviour persons on life stress factors.

**Part B** – Overall Comparison of Good and Poor Mental Health persons on life stress factors.

**Part C** – Overall Comparison of Normal persons and Heart patients on life stress factors.

**Part D** – The effect of types of behaviour (Type A and Type B) and Types of person (Normal persons and Heart patients) on different life stress factors.

**Part E** – The effect of types of mental health (Good and Poor) and Types of person (Normal persons and Heart patients) on different life stress factors

**Part F** – The effect of types of behaviour (Type A and Type B) and Types of mental health (Good and Poor) on different life stress factors of normal persons and heart patients.

## Part A

### Overall comparison of Type A and Type B behaviour persons on life stress factors.

In this section an attempt has been made to study and compare the life stress factors of type A and type B behaviour persons. For this purpose A. B. B. P. S. (A B Behaviour Pattern Scale) was administered on 150 normal persons and 150 heart patients. Out of the above 300 persons I found 95 type A behaviour persons and 97 Type B behaviour persons on the basis of  $Q_3$  (61.00) and  $Q_1$  (59.00) values. The results have shown in the table no. 1.

Table No. 1

| Factors         | Mean<br>S.D. | Type of Behaviour            |                             | Critical Ratio |
|-----------------|--------------|------------------------------|-----------------------------|----------------|
|                 |              | Type A<br>Behaviour<br>N= 95 | Type B<br>Behaviour<br>N=97 |                |
| A. Anxiety      | Mean<br>S.D. | 17.01                        | 16.32                       | 1.21 > .05     |
|                 |              | 4.04                         | 3.88                        |                |
| B. Stress       | Mean<br>S.D. | 16.96                        | 17.21                       | 0.45 > .05     |
|                 |              | 4.14                         | 3.62                        |                |
| C. Depression   | Mean<br>S.D. | 16.56                        | 17.26                       | 1.38 > .05     |
|                 |              | 3.89                         | 3.07                        |                |
| D. Regression   | Mean<br>S.D. | 16.76                        | 17.08                       | 0.55 > .05     |
|                 |              | 4.22                         | 3.80                        |                |
| E. Fatigue      | Mean<br>S.D. | 15.16                        | 15.84                       | 0.94 > .05     |
|                 |              | 5.27                         | 4.70                        |                |
| F. Guilt        | Mean<br>S.D. | 15.01                        | 15.04                       | 0.06 > .05     |
|                 |              | 3.72                         | 3.76                        |                |
| G. Extraversion | Mean<br>S.D. | 17.20                        | 18.33                       | 2.68 < .05     |
|                 |              | 3.43                         | 2.28                        |                |
| H. Arousal      | Mean<br>S.D. | 18.17                        | 18.52                       | 0.82 > .05     |
|                 |              | 2.93                         | 2.99                        |                |
| Total           | Mean<br>S.D. | 132.82                       | 135.59                      | 0.99 > .05     |
|                 |              | 21.82                        | 16.34                       |                |

d.f. at .05 level ---> 1.97

d.f. at .01 level ---> 2.60

Table no. 1 shows that the Type A behaviour persons have higher anxiety (mean 17.01) than Type B behaviour persons (mean 16.32). To see the significant difference between the Type A and the Type B behaviour persons, the critical ratio (A x B) was calculated. The required significant value in critical ratio at .01 level is 2.60 and at .05 level 1.97 for the degree of freedom 190. The table 1 shows that persons having type A behaviour do not differ on Anxiety as the life stress factor (critical ratio found 1.21 at .05 level).

This table also show that Stress level of type B behaviour persons is higher (mean 17.21) than Type A behaviour persons (mean 16.96). There is no significant difference found in stress between Type A and Type B behaviour persons (critical ratio found 0.45 at .05 level).

The depression level of type B behaviour persons found higher (mean 17.26) than type A behaviour persons (mean 16.56). But there is no significant difference in the depression level of Type A and Type B behaviour persons (critical ratio found 1.38 at .05 level). Also regression of type B behaviour persons is higher (mean 17.08) than type A behaviour persons (mean 16.76), and there is no significant difference found in regression of type A and type B behaviour persons (critical ratio found 0.55 at .05 level).

Table 1 results shows that the Fatigue of type B behaviour persons is higher (mean 15.84) than type A behaviour persons (mean 15.16). There is no significant difference found in fatigue between the type A and the type B behaviour persons (critical ratio found 0.94 at .05 level).

The results reveal that the Guilt Factor of the type B behaviour persons is higher (mean 15.04) than the type A behaviour persons (mean 15.01) and there is no significant difference found in Guilt between the type A and the type B behaviour persons (critical ratio found 0.06 at .05 level). The Extraversion value of life stress factors of type B behaviour persons is also higher (mean 18.33) than type A behaviour persons (mean 17.20). There is a significant difference found in extraversion between the type A and the type B behaviour persons (Critical ratio found 2.68 at .05 level).

Table no. 1 shows that, the Arousal value of type B persons is higher (mean 18.52) than type A behaviour (mean 18.17). The Critical ratio is found 0.82 at .05 level. There is no significant difference of arousal found between the type A and the type B behaviour persons.

It is note worthy that the life stress level of Type B behaviour persons is higher (mean 135.59) than the type A behaviour persons (mean 132.82), but the critical ratio of the both is considerably low (critical ratio found 0.99 at .05 level). The result indicate that type B behaviour persons have high stress, depression, regression, fatigue, guilt, extraversion and arousal than Type A. But Type A behaviour persons have high anxiety than type B behaviour persons. Type A and Type B behaviour persons have significant difference on extraversion as life stress factor. Thus hypothesis – stating 1 "Persons having Type A and Type B behaviour do not differ on life stress factors." is rejected.

## Part B

### Overall Comparison of Good and Poor Mental Health persons on life stress factors.

In this section an attempt has been made to study and compare the life stress factors of Good mental health persons and poor mental health persons. For this purpose M. H. S. (Mental Health scale) was administered on 150 Normal persons and 150 heart patients. Out of the above 300 persons I found 156 subjects in 77 persons have good mental health and 79 persons have poor mental on the basis of  $Q_3$  (186.00) and  $Q_1$  (163.00) values. The results have shows in table no. 2. -

Table No. 2

| Factors         | Mean<br>S.D. | Type of Mental Health         |                               | Critical Ratio |
|-----------------|--------------|-------------------------------|-------------------------------|----------------|
|                 |              | Good Mental<br>Health<br>N=77 | Poor Mental<br>Health<br>N=79 |                |
| A . Anxiety     | Mean<br>S.D. | 15.40                         | 19.96                         | 6.88 < .01     |
|                 |              | 3.94                          | 4.33                          |                |
| B. Stress       | Mean<br>S.D. | 15.83                         | 19.96                         | 6.44 < .01     |
|                 |              | 3.76                          | 4.24                          |                |
| C. Depression   | Mean<br>S.D. | 15.91                         | 19.84                         | 7.48 < .01     |
|                 |              | 3.20                          | 3.36                          |                |
| D. Regression   | Mean<br>S.D. | 15.62                         | 20.91                         | 7.55 < .01     |
|                 |              | 3.83                          | 4.87                          |                |
| E. Fatigue      | Mean<br>S.D. | 13.66                         | 20.20                         | 7.29 < .01     |
|                 |              | 4.35                          | 6.64                          |                |
| F. Guilt        | Mean<br>S.D. | 13.90                         | 16.91                         | 5.78 < .01     |
|                 |              | 3.50                          | 2.97                          |                |
| G. Extraversion | Mean<br>S.D. | 18.35                         | 16.15                         | 5.40 < .01     |
|                 |              | 2.55                          | 2.54                          |                |
| H. Arousal      | Mean<br>S.D. | 17.94                         | 18.19                         | 0.59 > .01     |
|                 |              | 2.80                          | 2.52                          |                |
| Total           | Mean<br>S.D. | 126.60                        | 152.10                        | 8.26 < .01     |
|                 |              | 17.29                         | 21.12                         |                |
|                 |              | d.f. at .05                   | 1.97                          |                |
|                 |              | d.f. at .01                   | 2.60                          |                |

Table no. 2 shows that Poor mental health persons have higher anxiety (mean 19.96) than good mental health persons (mean 15.40). To see the significant difference between the good mental health persons and poor mental health persons on life stress factors, the critical ratio (A x B) was calculated. The required significant value in critical ratio at .01 level is 2.60 and at .05 level is 1.97 for the degree of freedom 154. The table no. 2 shows that good mental health persons and poor mental health persons have significant difference on the anxiety at .01 level (critical ratio found 6.88 at .01).

The Table also shows that stress level of poor mental health persons is higher (mean 19.96) than good mental health persons (mean 15.83). There is a significant difference found on stress between good mental health and poor mental health persons at .01 level (critical ratio found 6.44). Results of table 2 reveal that poor mental health persons have higher depression (mean 19.84) than good mental health persons (mean 15.91). The significant difference found on depression, between good mental health persons and poor mental health persons at .01 level (critical ratio found 7.48).

Table 2 results show that poor mental health persons have higher regression (mean 20.91) than good mental health persons (mean 15.62). Also a significant difference found on regression between good mental health persons and poor mental health persons (Critical ratio found 7.55 at .01 level).

Table 2 reveals that the fatigue of poor mental health persons is higher (mean 20.20) than good mental health persons (mean 13.66) and there is a significant difference found on fatigue between good mental health persons and poor mental health persons (critical ratio

found 7.29 at .01 level). The value of Guilt of poor mental health persons is also higher (mean 16.91) than good mental health persons (mean 13.90) and there is a significant difference found on Guilt between the good mental health persons and poor mental health persons (critical ratio found 5.78 at .01 level).

The Table 2 shows that, Good mental health persons have higher extraversion value (mean 18.35) than poor mental health persons (mean 16.15) and there is a significant difference found on extraversion between the sub groups at .01 level (Value of critical ratio found 5.40).

The table 2 results show that arousal value of poor mental health persons is higher (mean 18.19) than good mental health persons (mean 17.94). But there is no significant difference found on arousal between the good mental health persons and poor mental health persons. The result of table 2 shows that poor mental health person's life stress is too much higher (mean 152.10) than good mental health persons (mean 126.60) and there is a significant difference found on life stress between good mental health persons and poor mental health persons (critical ratio found 8.26 at .01 level).

Finally poor mental health persons have high anxiety, stress, depression, Regression, fatigue, guilt, and arousal than good mental health persons and also have significant difference. But good mental health persons have high extraversion. Thus the hypothesis - Persons having Good Mental Health and Poor Mental Health do not differ on life stress factors," is rejected.

## Part C

### Overall Comparison of life stress factors of Normal persons and Heart patients.

In this section an attempt has been made to study and compare the different factors of life stress of types of person (Normal persons and Heart patients). For this purpose the 8 state questionnaires was administrated on 150 heart patients and 150 normal persons. The results have been shown in the table no. 3.

Table no. 3 shows that the heart patient have higher anxiety (mean 17.89) than the normal persons (mean 16.69). To see the significant difference between the heart patients and the normal persons the critical ratio ( $A \times B$ ) was calculated. The required significant value in critical ratio at .01 level is 2.60 and at .05 level 1.97 with the degree of freedom 298. The table 3 shows that normal persons and heart patients have significant difference on anxiety as life stress factor (critical ratio found 2.42 at .05 level).

This table also shows that stress level of heart patients is higher (mean 18.15) than normal persons (mean 17.15). There is a significant difference found in stress between Heart patients and normal persons (critical ratio found 2.04 at .05 level).

Table no. 3 results shows that Depression is too much higher in heart patients (mean 18.57) than normal persons (mean 16.35) and both group have significant difference in depression (critical ratio found 5.33 at .01 level).

Table no. 3 result shows that heart patient's regression is higher (mean 18.61) than normal persons (mean 16.62). It is revealing that

heart patients and normal persons have significant difference in regression (critical ratio found 3.77 at .01 level).

Table 3 results reveal that the heart patients fatigue value is too much higher (mean 18.17) then normal persons (mean 14.77). Table shows that there is a significant difference found between heart patients and normal persons in Fatigue value (critical ratio found 5.29 at .01 level).

**Table No. 3**

| Factors         | Mean<br>S.D. | Type of person             |                            | Critical Ratio |
|-----------------|--------------|----------------------------|----------------------------|----------------|
|                 |              | Heart<br>Patients<br>N=150 | Normal<br>Persons<br>N=150 |                |
| A. Anxiety      | Mean<br>S.D. | 17.89                      | 16.69                      | 2.42 < .05     |
|                 |              | 4.15                       | 4.43                       |                |
| B. Stress       | Mean<br>S.D. | 18.15                      | 17.15                      | 2.04 < .05     |
|                 |              | 4.63                       | 3.80                       |                |
| C. Depression   | Mean<br>S.D. | 18.57                      | 16.35                      | 5.33 < .01     |
|                 |              | 3.92                       | 3.26                       |                |
| D. Regression   | Mean<br>S.D. | 18.61                      | 16.62                      | 3.77 < .01     |
|                 |              | 5.02                       | 4.06                       |                |
| E. Fatigue      | Mean<br>S.D. | 18.17                      | 14.77                      | 5.29 < .01     |
|                 |              | 6.09                       | 4.99                       |                |
| F. Guilt        | Mean<br>S.D. | 15.33                      | 15.22                      | 0.26 > .05     |
|                 |              | 3.60                       | 2.78                       |                |
| G. Extraversion | Mean<br>S.D. | 17.15                      | 17.61                      | 1.31 > .05     |
|                 |              | 3.10                       | 2.99                       |                |
| H. Arousal      | Mean<br>S.D. | 18.29                      | 18.07                      | 0.67 > .05     |
|                 |              | 3.14                       | 2.51                       |                |
| Total           | Mean<br>S.D. | 142.15                     | 132.49                     | 4.00 < .01     |
|                 |              | 24.20                      | 17.03                      |                |

d.f. at .05 level ---> 1.97

d.f. at .01 level ---> 2.60

Table 3 shows that guilt level of the Heart patients is higher (mean 15.33) than normal persons (mean 15.22). There is no significant difference found between heart patients and normal persons in the guilt (Critical ratio found 0.26 at .05 level).

Table 3 shows that normal persons have higher extraversion quality (mean 17.61) than heart persons (mean 17.15). There is no significant difference found between heart patient and normal persons in extraversion (critical ratio found 1.31 at .05 level).

The results of table 3 indicate that heart patients have higher arousal value (mean 18.29) than normal persons (mean 18.07) and there is no significant difference found between heart patient and normal person in arousal value (critical ratio found 0.67 at .05 level).

It is note worthy that some of all the life stress factors result heart patient have higher stress (mean 142.15) than normal persons (mean 132.49). And there is a significant difference found between heart patients and normal persons in stress (critical ratio found 4.00 at .05 level).

SO the result of table 3 shows that heart patients have higher value in Anxiety, Stress, Depression, Regression, Fatigue, Guilt, Extraversion and Arousal. Normal persons and Heart patients have significant difference in Anxiety, Stress, Depression, Regression, and Fatigue. Thus the hypothesis stating 3 that, "Normal persons and Heart patients do not differ on life stress factors" is rejected.

## Part D

**Study the effect of Types of behaviour (Type A and Type B) and Types of persons (Normal persons and Heart patients) on life stress factors.**

In this section an attempt has been made to study the effect of types of persons (Normal persons and Heart patients) and types of behaviour (Type A and Type B) on life stress factors. I have selected 150 persons each from the both categories (Normal persons and Heart patients), and tried to find out how many of them exhibit the score of 61 or above, and put them in type 'A' behaviour persons, respectively, while the persons showing the ABBPS scale less them 59 or below have been put in to the type 'B' behaviour persons respectively.

The table no. 4.01 shows that 46 Normal persons and 49 Heart patients show the type 'A' behaviour symptoms and 59 normal persons and 39 Heart patients show the type 'B' behaviour symptoms.

**4.01 To study the significant effect of types of persons (Normal persons and Heart patients) and type of behaviour (Type A and Type B) on life stress.**

Table 4.01.1 shows the mean and SD value of type of behaviour persons (A & B) and types of persons (Normal persons and Heart patients) on life stress.

Table no. 4.01.1 shows that type B behaviour persons have higher score on (mean 135.89) than type A behaviour persons (mean 132.82). Heart patients have higher life stress (mean 138.29) than normal persons (mean 130.85). Results reveal that Type A heart patients have higher life stress (mean 135.51) than Type A normal persons (mean 129.96). Also Type B heart patients have higher stress (mean 141.87) than Type B normal persons. But in Normal Persons Type B behaviour normal persons have higher life stress (mean 131.54) than type A normal persons (mean 129.96). In heart patients, Type B heart patients have higher life stress (mean 141.87) than type A behaviour heart patients (mean 135.51).

Table no. 4.01.1

| Sub Groups        |   |      | Types of persons |        | Total  |  |
|-------------------|---|------|------------------|--------|--------|--|
|                   |   |      | Normal           | Heart  |        |  |
| Type of Behaviour | A | N    | 46               | 49     | 95     |  |
|                   |   | Mean | 129.96           | 135.51 | 132.82 |  |
|                   |   | S.D. | 17.32            | 25.22  | 21.82  |  |
|                   | B | N    | 59               | 38     | 97     |  |
|                   |   | Mean | 131.54           | 141.87 | 135.89 |  |
|                   |   | S.D. | 13.18            | 18.81  | 16.34  |  |
|                   |   | N    | 105              | 87     | 192    |  |
|                   |   | Mean | 130.85           | 138.29 | 134.22 |  |
|                   |   | S.D. | 15.08            | 22.74  | 19.25  |  |

To find out the effect of types of behaviour (Type A and Type B) and types of persons (Normal persons and Heart patients) on life stress, 2X2 factorial design has been used and the analysis of variance is calculated. The results are reflected in Table 4.01.2.

Table no. 4.01.2

| Source of Variance                                  | Sum of Square | d.f. | Mean Squares | F ratio                                    |
|---|---------------|------|--------------|--|
| A. Type of behaviour<br>(Type A and Type B)<br>SS a | 738.87        | 1    | 738.87       | 7.86 < .01                                 |
| B. Type of Persons<br>(Heart and Normal)<br>SS b    | 2952.34       | 1    | 2952.87      | 31.41 < .01                                |
| Interaction (AXB)<br>SS ab                          | 266.65        | 1    | 266.65       | 2.83 < .01                                 |
| SS Within Cell                                      | 67179.14      | 188  | 94.00        | d.f. .05 level 1.98<br>d.f. .01 level 2.63 |

It is evident from the table no. 4.01.2 that the type of behaviour in Type A and Type B persons has a significant effect on life stress (F ratio found 7.86 at .01 level). It is also evident from the same table result that the Normal persons and Heart patients have significant effect on life stress (F ratio found 31.41 at .01 level). It is also noted that the interaction effect of types of behaviour (A&B) and types of persons (Normal persons and Heart patients) have significant effect on life stress (F ratio found 2.83 at .01). There is no significant effect of types of behaviour (A & B) and types of person (Heart patients and Normal persons) on life stress factors," is rejected.

**4.02 To study the significant effect of types of persons (Normal persons and Heart patients) and types of behaviour (Type A and Type B) on Anxiety as life stress factor.**

Table 4.02.1 shows the mean and SD value of types of behaviour and types of persons on anxiety.

Table No. 4.02.1

| Sub Groups        |   | Types of persons |       | Total |  |
|-------------------|---|------------------|-------|-------|--|
|                   |   | Normal           | Heart |       |  |
| Type of Behaviour | A | N                | 46    | 49    |  |
|                   |   | Mean             | 16.83 | 17.18 |  |
|                   |   | S.D.             | 4.14  | 3.97  |  |
|                   | B | N                | 59    | 38    |  |
|                   |   | Mean             | 15.88 | 17.00 |  |
|                   |   | S.D.             | 4.22  | 3.20  |  |
|                   |   | N                | 105   | 87    |  |
|                   |   | Mean             | 16.30 | 17.10 |  |
|                   |   | S.D.             | 4.19  | 3.64  |  |

It is evident from table no. 4.02.2 that type A behaviour persons have higher anxiety (mean 17.01) than type B behaviour persons (mean 16.32). Heart patients have higher anxiety (mean 17.10) than normal persons (mean 16.30). Result shows that the Type A heart patients have higher anxiety (mean 17.18) than type A normal persons (mean 16.83). Type B heart patients also have higher anxiety (mean 17.00) than type B normal persons (mean 15.88). The type A normal persons have higher anxiety (mean 16.83) than type B behaviour normal persons (mean 15.88). In heart patients, type A heart patients have higher anxiety (mean 17.18) than type B heart patients (mean 17.00).

To find out the effect of types of behaviour (Type A and Type B) and types of persons (Normal persons and Heart patients) on anxiety as life stress factor, 2X2 factorial design has been used and the analysis of variance is calculated. The results are reflected in Table 4.02.2.

**Table No. 4.02.2**

| Source of Variance                                  | Sum of Square | d.f. | Mean Squares | F ratio                                    |
|---|---------------|------|--------------|--|
| A. Type of behaviour<br>(Type A and Type B)<br>SS a | 14.91         | 1    | 14.91        | 0.95 > .05                                 |
| B. Type of Persons<br>(Heart and Normal)<br>SS b    | 25.51         | 1    | 25.51        | 1.62 > .05                                 |
| Interaction (AXB)<br>SS ab                          | 6.78          | 1    | 6.78         | 0.43 > .05                                 |
| SS Within Cell                                      | 2944.13       | 188  | 15.66        | d.f. .05 level 1.98<br>d.f. .01 level 2.63 |

Results of the table no. 4.02.2 reveal that there is no significant effect found on anxiety of types of behaviour (type A and type B) (F ratio found 0.95 at .05 level). It is also noted that the types of persons (Normal persons and heart patients) have not significant effect on anxiety (F ratio found 1.62 at .05 level). Interaction of types of behaviour (A & B) and types of persons (Normal Persons and Heart Patients) has no significant effect (F ratio found 0.43 at .05 level) on anxiety. Thus the hypothesis 4 (a) "There is no significant effect of types of behaviour (A & B) and types of person (Heart patients and Normal persons) on Anxiety as life stress factor," is confirmed.

#### **4.03 To study the significant effect of types of persons (Normal persons and Heart patients) and types of behaviour (Type A and Type B) on stress as life stress factor.**

Table 4.03.1 shows the mean and SD value of types of behaviour and types of persons on stress.

Table No. 4.03.1

| Sub Groups        |   |      | Types of persons |       | Total |  |
|-------------------|---|------|------------------|-------|-------|--|
|                   |   |      | Normal           | Heart |       |  |
| Type of Behaviour | A | N    | 46               | 49    | 95    |  |
|                   |   | Mean | 17.35            | 16.59 | 16.96 |  |
|                   |   | S.D. | 3.91             | 4.36  | 4.14  |  |
|                   | B | N    | 59               | 38    | 97    |  |
|                   |   | Mean | 16.81            | 17.82 | 17.21 |  |
|                   |   | S.D. | 3.66             | 3.52  | 3.62  |  |
|                   |   | N    | 105              | 87    | 192   |  |
|                   |   | Mean | 17.05            | 17.13 | 17.08 |  |
|                   |   | S.D. | 3.76             | 4.04  | 3.88  |  |

The table no. 4.03.1 shows that the type B behaviour persons have higher stress (mean 17.21) than the type A behaviour persons (mean 16.396). Results reveal that heart patients have higher stress (mean 17.13) than normal persons (mean 17.05). Types of person's shows that Type A normal persons have higher stress (mean 17.35) than Type B normal persons (mean 16.81). Type B heart patients have higher stress (mean 17.82) than type A heart patients (mean 16.59). The type A behaviour normal persons has higher stress (mean 17.35) than Type A behaviour heart patients (mean 16.59). But type B behaviour heart patients have higher stress (mean 17.82) than type B behaviour normal persons (mean 16.81).

To find out the effect of types of behaviour (Type A and Type B) and types of persons (Normal persons and Heart patients) on stress as life stress factor, 2X2 factorial design has been used and the analysis of variance is calculated. The results are reflected in Table.

4.03.2

Table No. 4.03.2

| Source of Variance                                  | Sum of Square | d.f. | Mean Squares | F ratio                                    |
|---|---------------|------|--------------|--|
| A. Type of behaviour<br>(Type A and Type B)<br>SS a | 5.57          | 1    | 5.57         | 0.36 > .05                                 |
| B. Type of Persons<br>(Heart and Normal)<br>SS b    | 0.71          | 1    | 0.71         | 0.05 > .05                                 |
| Interaction (AXB)<br>SS ab                          | 36.19         | 1    | 36.19        | 2.39 < .05                                 |
| SS Within Cell                                      | 2836.93       | 188  | 15.09        | d.f. .05 level 1.98<br>d.f. .01 level 2.63 |

It is evident from the table no. 4.03.2 that there is no significant effect found on stress of types of behaviour (F ratio found 0.36 at .05 level). Also types of person (Normal persons and heart patients) have not significant effect on stress (F ratio found 0.05 at .05 level). But interaction of both, types of behaviour (A & B) and types of person (Normal persons and heart patients) has significant effect on stress (F ratio found 2.39 at .05 level). Thus the hypothesis stating that 4 (b), "There is no significant effect of types of behaviour (A & B) and a types of person (Heart patients and Normal persons) on Stress as life stress factor "is rejected.

**4.04 To study the significant effect of types of persons (Normal persons and Heart patients) and types of behaviour (Type A and Type B) on Depression as life stress factor.**

Table 4.04.1 shows the mean and SD value of types of behaviour and types of persons on depression.

Table No. 4.04.1

| Sub Groups        |   | Types of persons |       | Total |  |
|-------------------|---|------------------|-------|-------|--|
|                   |   | Normal           | Heart |       |  |
| Type of Behaviour | A | N                | 46    | 49    |  |
|                   |   | Mean             | 15.41 | 17.63 |  |
|                   |   | S.D.             | 3.29  | 4.14  |  |
|                   | B | N                | 59    | 38    |  |
|                   |   | Mean             | 16.53 | 18.39 |  |
|                   |   | S.D.             | 2.77  | 3.21  |  |
|                   |   | N                | 105   | 87    |  |
|                   |   | Mean             | 16.04 | 17.97 |  |
|                   |   | S.D.             | 3.04  | 3.76  |  |

The results of table 4.04.1 show that type B behaviour persons have higher depression (mean 17.26) than type A behaviour persons (mean 16.56). Results reveal that heart patients have higher depression (mean 17.97) than normal persons. Type A behaviour Heart patients have higher depression (mean 17.63) than Type A behaviour normal persons (mean 15.41). Also type B behaviour heart patients have higher depression (mean 18.39) than type B behaviour normal persons. Type B behaviour Normal persons have higher depression (mean 16.53) than Type A behaviour normal persons (mean 15.41). Type B behaviour heart patients also have higher depression (mean 18.39) than type A behaviour heart patients (mean 17.63).

To find out the effect of types of behaviour (Type A and Type B) and types of persons (Normal persons and Heart patients) on

depression as life stress factor, 2X2 factorial design has been used and the analysis of variance is calculated. The results are reflected in Table no. 4.04.2

**Table No. 4.04.2**

| Source of Variance                                  | Sum of Square | d.f. | Mean Squares | F ratio                                    |
|---|---------------|------|--------------|--|
| A. Type of behaviour<br>(Type A and Type B)<br>SS a | 41.14         | 1    | 41.14        | 3.62 < .01                                 |
| B. Type of Persons<br>(Heart and Normal)<br>SS b    | 195.75        | 1    | 195.75       | 17.24 < .01                                |
| Interaction (AXB)<br>SS ab                          | 1.44          | 1    | 1.44         | 0.13 > .05                                 |
| SS Within Cell                                      | 2134.33       | 188  | 11.35        | d.f. .05 level 1.98<br>d.f. .01 level 2.63 |

It is evident from the table no. 4.04.2 that the types of behaviour have significant effect on depression (F ratio found 3.62 at .01 level). Types of person also have significant effect on depression (F ratio found 17.24 at .01 level). The interaction of types of behaviour (A&B) and types of person (Normal persons and heart patients) has no significant effect on depression (F ratio found 0.13 at .05 level). Thus the hypothesis stating 4 (c), "There is no significant effect of types of behaviour (A & B) and types of person (Heart patients and Normal persons) on Depression as life stress factor "are rejected.

#### **4.05 To study the significant effect of types of persons (Normal persons and Heart patients) and types of behaviour (Type A and Type B) on Regression as life stress factor.**

Results of table 4.05.1 shows that type B behaviour persons have higher regression (mean 17.08) than type A behaviour persons

(mean 16.57). Table shows that Heart patients have higher regression (mean 17.80) than normal persons (mean 16.19). Result shows that type B behaviour normal persons have higher regression (mean 16.42) than type A behaviour normal persons (mean 15.89). Also type B behaviour heart patients have higher regression (mean 18.11) than type A behaviour heart persons (mean 17.57).

Table no. 4.05.1

| Sub Groups        |   |      | Types of persons |       | Total |  |
|-------------------|---|------|------------------|-------|-------|--|
|                   |   |      | Normal           | Heart |       |  |
| Type of Behaviour | A | N    | 46               | 49    | 95    |  |
|                   |   | Mean | 15.89            | 17.57 | 16.57 |  |
|                   |   | S.D. | 4.20             | 4.12  | 4.25  |  |
|                   | B | N    | 59               | 38    | 97    |  |
|                   |   | Mean | 16.42            | 18.11 | 17.08 |  |
|                   |   | S.D. | 3.60             | 3.92  | 3.80  |  |
|                   |   | N    | 105              | 87    | 192   |  |
|                   |   | Mean | 16.19            | 17.80 | 16.94 |  |
|                   |   | S.D. | 3.86             | 4.02  | 4.01  |  |

Through table it is reveal that Type A behaviour Heart patients have higher regression (mean 17.57) than type A behaviour normal persons (mean 15.89) and type B behaviour heart patients have higher regression (mean 18.11) than type B behaviour normal persons (mean 16.42).

To find out the effect of types of behaviour (Type A and Type B) and types of persons (Normal persons and Heart patients) on regression as life stress factor, 2X2 factorial design has been used and the analysis of variance is calculated. The results are reflected in Table no 4.05.2

**Table No. 4.05.2**

| Source of Variance                                  | Sum of Square | d.f. | Mean Squares | F ratio                                    |
|---|---------------|------|--------------|--|
| A. Type of behaviour<br>(Type A and Type B)<br>SS a | 13.31         | 1    | 13.31        | 0.85 > .05                                 |
| B. Type of Persons<br>(Heart and Normal)<br>SS b    | 132.31        | 1    | 132.31       | 8.49 < .01                                 |
| Interaction (AXB)<br>SS ab                          | 0.00          | 1    | 0.00         | 0.00 > .05                                 |
| SS Within Cell                                      | 2928.44       | 188  | 15.58        | d.f. .05 level 1.98<br>d.f. .01 level 2.63 |

Table no. 4.05.2 shows that types of behaviour (A & B) have no significant effect on regression (F ratio found 0.85 at .05 level). But types of person (Normal persons and Heart Patients) have significant effect on regression (F ratio found 8.49 at .01 level). The interaction of types of behaviour and types of person has no significant effect on regression (F ratio found 0.00 at .05 level). Thus the hypothesis stating 4 (d), "There is no significant effect of types of behaviour (A & B) and types of person (Heart patients and Normal persons) on regression as life stress factor, "is rejected

**4.06 To study the significant effect of types of persons (Normal persons and Heart patients) and types of behaviour (Type A and Type B) on Fatigue as life stress factor.**

Table no. 4.06.1 result show that Type B behaviour persons have higher Fatigue (mean 15.84) than type A behaviour persons (mean 15.16). Result shows that type A behaviour heart persons

have high Fatigue (mean 16.02) than Type A behaviour normal persons (mean 14.24). Also in type B behaviour heart patients have higher Fatigue (mean 18.18) than type B behaviour normal persons (mean 14.32).

Table NO. 4.06.1

| Sub Groups        |   |      | Types of persons |       | Total |  |
|-------------------|---|------|------------------|-------|-------|--|
|                   |   |      | Normal           | Heart |       |  |
| Type of Behaviour | A | N    | 46               | 49    | 95    |  |
|                   |   | Mean | 14.24            | 16.02 | 15.16 |  |
|                   |   | S.D. | 4.69             | 5.68  | 5.27  |  |
|                   | B | N    | 59               | 38    | 97    |  |
|                   |   | Mean | 14.32            | 18.18 | 15.84 |  |
|                   |   | S.D. | 3.86             | 4.96  | 4.70  |  |
|                   |   |      | N                | 105   | 192   |  |
|                   |   |      | Mean             | 14.29 | 16.97 |  |
|                   |   |      | S.D.             | 4.22  | 5.46  |  |
|                   |   |      |                  |       | 4.99  |  |

It is evident from the table that Type B behaviour normal persons have higher Fatigue (mean 14.32) than Type A behaviour normal persons (mean 14.24). Also Type B behaviour heart patients have higher Fatigue (mean 18.18) than type A behaviour heart patients (mean 16.02).

To find out the effect of types of behaviour (Type A and Type B) and types of persons (Normal persons and Heart patients) on fatigue as life stress factor, 2X2 factorial design has been used and the analysis of variance is calculated. The results are reflected in Table no. 4.06.2

**Table No. 4.06.2**

| Source of Variance                                  | Sum of Square | d.f. | Mean Squares | F ratio                                    |
|---|---------------|------|--------------|--|
| A. Type of behaviour<br>(Type A and Type B)<br>SS a | 59.10         | 1    | 59.10        | 2.57 < .05                                 |
| B. Type of Persons<br>(Heart and Normal)<br>SS b    | 372.88        | 1    | 372.88       | 16.24 < .01                                |
| Interaction (AXB)<br>SS ab                          | 50.70         | 1    | 50.70        | 2.20 < .05                                 |
| SS Within Cell                                      | 4315.94       | 188  | 22.96        | d.f. .05 level 1.98<br>d.f. .01 level 2.63 |

Table 4.06.2 results show that the types of behaviour (A & B) persons have significant effect on Fatigue (F ratio found 2.57 at .05 level). Also there is a significant effect found on Fatigue of types of persons (F ratio found 16.24 at .01 level). Interaction of both (type of behaviour and type of person) has significant effect on Fatigue (F ratio found 2.20 at .05 level). Thus the hypothesis stating that 4 (e), "There is no significant effect of types of behaviour (A & B) and types of person (Heart patients and Normal persons) on Fatigue as life stress factor " is rejected.

**4.07 To study the significant effect of types of persons (Normal persons and Heart patients) and types of behaviour (Type A and Type B) on Guilt as life stress factor.**

Table 4.06.1 shows the mean and SD value of types of behaviour and types of persons on Guilt.

Table No. 4.07.1

| Sub Groups        |   | Types of persons |       | Total |  |
|-------------------|---|------------------|-------|-------|--|
|                   |   | Normal           | Heart |       |  |
| Type of Behaviour | A | N                | 46    | 49    |  |
|                   |   | Mean             | 14.67 | 15.33 |  |
|                   |   | S.D.             | 3.63  | 3.81  |  |
|                   | B | N                | 59    | 38    |  |
|                   |   | Mean             | 15.08 | 14.97 |  |
|                   |   | S.D.             | 3.62  | 4.02  |  |
|                   |   | N                | 105   | 87    |  |
|                   |   | Mean             | 14.90 | 15.17 |  |
|                   |   | S.D.             | 3.61  | 3.88  |  |
|                   |   |                  |       | 3.73  |  |

Table no. 4.07.2 shows that type B behaviour persons have higher Guilt (mean 15.04) than type A behaviour persons (mean 15.01). The result shows that Heart patients have higher Guilt (mean 15.17) than normal persons (mean 14.90). It is evident from table 4.06.1 that Type A behaviour heart patients have higher Guilt (mean 15.33) than Type A behaviour normal persons (mean 14.67). But Type B behaviour normal persons have higher Guilt (mean 15.08) than type B behaviour heart patients. Type B behaviour normal persons have higher Guilt (mean 15.08) than Type A behaviour normal persons (mean 14.67). Type A behaviour heart patients have higher Guilt (mean 15.33) than type B behaviour heart patients (mean 14.97).

To find out the effect of types of behaviour (Type A and Type B) and types of persons (Normal persons and Heart patients) on guilt as

life stress factor, 2X2 factorial design has been used and the analysis of variance is calculated. The results are reflected in Table no. 4.07.2

Table No. 4.07.2

| Source of Variance                                  | Sum of Square | d.f. | Mean Squares | F ratio                                    |
|---|---------------|------|--------------|--|
| A. Type of behaviour<br>(Type A and Type B)<br>SS a | 0.04          | 1    | 0.04         | 0.00 > .05                                 |
| B. Type of Persons<br>(Heart and Normal)<br>SS b    | 3.43          | 1    | 3.43         | 0.24 > .05                                 |
| Interaction (AXB)<br>SS ab                          | 6.83          | 1    | 6.83         | 0.49 > .05                                 |
| SS Within Cell                                      | 2646.43       | 188  | 14.07        | d.f. .05 level 1.98<br>d.f. .01 level 2.63 |

Results of table 4.07.2 show that types of behaviour have no significant effect on Guilt (F ratio found 0.00 at .05 level). Also types of person have no significant effect on Guilt (F ratio found 0.24 at .05 level). Interaction of types of behaviour and types of persons has no significant effect on Guilt (F ratio found 0.49 at .05 level). Thus the hypothesis 4 (f), "There is no significant effect of types of behaviour (A & B) and types of person (Heart patients and Normal persons) on Guilt as life stress factor," is confirmed.

**4.08 To study the significant effect of types of persons (Normal persons and Heart patients) and types of behaviour (Type A and Type B) on Extraversion as life stress factor.**

Table 4.08.1 shows the mean and SD value of types of behaviour and types of persons on extraversion.

Table No. 4.08.1

| Sub Groups        |   | Types of persons |       | Total |  |
|-------------------|---|------------------|-------|-------|--|
|                   |   | Normal           | Heart |       |  |
| Type of Behaviour | A | N                | 46    | 49    |  |
|                   |   | Mean             | 17.50 | 16.92 |  |
|                   |   | S.D.             | 3.38  | 3.49  |  |
|                   | B | N                | 59    | 38    |  |
|                   |   | Mean             | 18.32 | 18.34 |  |
|                   |   | S.D.             | 2.40  | 2.12  |  |
|                   |   | N                | 105   | 87    |  |
|                   |   | Mean             | 17.96 | 17.54 |  |
|                   |   | S.D.             | 2.88  | 3.04  |  |
|                   |   |                  |       | 2.95  |  |

Results of table 4.08.1 reveal that Type B behaviour persons have higher extraversion quality (mean 18.33) than type A behaviour persons (mean 16.92). Normal persons have higher extraversion quality (mean 17.96) than heart patients (mean 17.54). Type A behaviour normal persons have higher extraversion quality (mean 17.50) than type A behaviour heart persons (mean 16.92). But type B behaviour heart persons have high extraversion quality (mean 18.34) than type B behaviour normal persons (mean 18.32). Normal Persons having type B behaviour have high extraversion quality (mean 18.32) than normal persons having type A behaviour (mean 17.50). Type B behaviour heart persons also have high extraversion quality (mean 18.34) than type A behaviour heart persons (mean 16.92).

To find out the effect of types of behaviour (Type A and Type B) and types of persons (Normal persons and Heart patients) on extraversion as life stress factor, 2X2 factorial design has been used

and the analysis of variance is calculated. The results are reflected in Table no. 4.08.2

Table No. 4.08.2

| Source of Variance                                  | Sum of Square | d.f. | Mean Squares | F ratio                                    |
|---|---------------|------|--------------|--|
| A. Type of behaviour<br>(Type A and Type B)<br>SS a | 59.05         | 1    | 59.05        | 6.95 < .01                                 |
| B. Type of Persons<br>(Heart and Normal)<br>SS b    | 3.69          | 1    | 3.69         | 0.44 > .05                                 |
| Interaction (AXB)<br>SS ab                          | 4.24          | 1    | 4.24         | 0.51 > .05                                 |
| SS Within Cell                                      | 1596.61       | 188  | 8.49         | d.f. .05 level 1.98<br>d.f. .01 level 2.63 |

Result of table 4.08.2 shows the types of behaviour has significant effect on extraversion (F ratio found 6.95 at .01 level). But types of person have not significant effect on extraversion (F ratio found 0.44 at .05 level). Also interaction of types of person and types of behaviour has not significant effect on extraversion (F ratio found 0.51 at .05 level). Thus the hypothesis stating 4 (g), "There is no significant effect of type of behaviour (A & B) and types of person (Heart patients and Normal persons) on Extraversion as life stress factor," is rejected.

**4.09 To study the significant effect of types of persons (Normal persons and Heart patients) and types of behaviour (Type A and Type B) on Arousal as life stress factor.**

Table 4.09.1 shows the mean and SD value of type of behaviour and types of persons on Arousal.

Table no. 4.09.1

| Sub Groups        |   | Types of persons |       | Total |  |
|-------------------|---|------------------|-------|-------|--|
|                   |   | Normal           | Heart |       |  |
| Type of Behaviour | A | N                | 46    | 95    |  |
|                   |   | Mean             | 18.07 | 18.27 |  |
|                   |   | S.D.             | 1.98  | 3.62  |  |
|                   | B | N                | 59    | 38    |  |
|                   |   | Mean             | 18.17 | 19.05 |  |
|                   |   | S.D.             | 3.09  | 2.77  |  |
|                   |   | N                | 105   | 87    |  |
|                   |   | Mean             | 18.12 | 18.61 |  |
|                   |   | S.D.             | 2.65  | 3.28  |  |
|                   |   |                  |       | 2.95  |  |

Result reveal that type B behaviour persons have higher Arousal level (mean 18.52) than type A behaviour persons (mean 18.17). Heart patients have higher arousal level (mean 18.61) than normal persons (mean 18.12). It is evident from table 4.09.1 that Type B behaviour normal persons have higher arousal than type A behaviour normal persons (mean 18.07). Also type B behaviour heart patients have higher arousal (mean 19.05) than type A behaviour heart patients (mean 18.27). Tables reveal that Type A behaviour heart patient have higher arousal (mean 18.27) than Type A behaviour normal persons (mean 18.07). Type B behaviour heart patients also have higher arousal level (mean 19.05) than type B behaviour normal persons (mean 18.17).

To find out the effect of types of behaviour (Type A and Type B) and types of persons (Normal persons and Heart patients) on arousal as life stress factor, 2X2 factorial design has been used and the

analysis of variance is calculated. The results are reflected in Table no. 4.09.2

Table No. 4.09.2

| Source of Variance                                  | Sum of Square | d.f. | Mean Squares | F ratio                                    |
|---|---------------|------|--------------|--|
| A. Type of behaviour<br>(Type A and Type B)<br>SS a | 9.31          | 1    | 9.31         | 1.06 > .05                                 |
| B. Type of Persons<br>(Heart and Normal)<br>SS b    | 13.74         | 1    | 13.74        | 1.57 > .05                                 |
| Interaction (AXB)<br>SS ab                          | 5.46          | 1    | 5.46         | 0.62 > .05                                 |
| SS Within Cell                                      | 1642.56       | 188  | 8.74         | d.f. .05 level 1.98<br>d.f. .01 level 2.63 |

Results of table no.4.09.2 show that types of behaviour have not significant effect on arousal (F ratio found 1.06 at .05 level). Also types of person have not significant effect on arousal (F ratio found 1.57 at .05 level). Interaction of types of person and types of behaviour has not significant effect on arousal (F ratio found 0.62 at .05 level). Thus the hypothesis stating 4 (h), "There is no significant effect of types of behaviour (A & B) and types of person (Heart patients and Normal persons) on Arousal as life stress factor, "is confirmed.

## Part E

Study the effect of Types of mental health (Good and Poor), and Types of persons (Normal persons and Heart patients) on life stress.

In this section an attempt has been made to study the effect of types of mental health (Good and poor) and types of persons (Normal and Heart) on life stress and their factors. I have selected 150 persons each from the both categories (Normal persons and Heart patients), and tried to find out how many normal persons exhibit the score  $Q_3$  191 or above, and put them in Good Mental Health Normal persons respectively, while the persons showing the MHS scale score  $Q_1$  166 or below have been put in to poor Mental health Normal persons. Similarly it also tried to find out how many heart patients exhibit the score  $Q_3$  182 or above, and put them in Good Mental Health Heart patients respectively, while the heart patients showing the MHS scale score  $Q_1$  160 or below have been put in to poor Mental health heart patients.

It is found out, 39 Normal persons and 40 heart patients show the Good mental health symptoms and 42 Normal persons and 39 heart patients show poor mental health symptoms.

**5.01 To study the significant effect of types of mental health (Good and Poor), and types of person (Normal persons and Heart patients) on life stress.**

Table 5.01.1 shows the mean and SD value of types of mental health and types of persons on life stress.

Table No. 5.01.1

| Sub Groups            |      | Types of persons |        | Total  |        |  |
|-----------------------|------|------------------|--------|--------|--------|--|
|                       |      | Normal           | Heart  |        |        |  |
| Type of Mental Health | Good | N                | 39     | 40     | 79     |  |
|                       |      | Mean             | 123.03 | 132.48 | 127.81 |  |
|                       |      | S.D.             | 15.37  | 21.14  | 19.00  |  |
|                       | Poor | N                | 42     | 39     | 81     |  |
|                       |      | Mean             | 142.98 | 158.13 | 150.27 |  |
|                       |      | S.D.             | 14.20  | 22.16  | 19.86  |  |
|                       |      | N                | 81     | 79     | 160    |  |
|                       |      | Mean             | 133.37 | 145.14 | 139.18 |  |
|                       |      | S.D.             | 17.78  | 25.08  | 22.42  |  |

Result of table no. 5.01.1 shows that Poor mental health persons have higher life stress (mean 150.27) than good mental health persons (mean 127.81). Results reveal that heart patients have higher life stress (mean 145.14) than normal persons (mean 133.37). Persons having poor mental health have higher life stress (mean 142.98) than persons having good mental health (mean 123.03). Also in heart patients poor mental health persons have higher life stress (mean 158.13) than good mental health persons (mean 136.75). Good mental health Heart patients have higher life stress (mean 132.48) than normal persons (mean 123.03) and Poor mental health heart patients have higher life stress than poor mental health normal persons (mean 142.98).

To find out the effect of mental health (Good and poor) and types of persons (Normal persons and Heart patients) on life stress of

types, 2X2 factorial design has been used and the analysis of variance is calculated. The results are reflected in Table. 5.01.2.

Table No. 5.01.2

| Source of Variance                            | Sum of Square | d.f. | Mean Squares | F ratio                                    |
|---|---------------|------|--------------|--|
| A. Type of Mental Health (Good and Poor) SS a | 20776.40      | 1    | 20776.40     | 60.79 < .01                                |
| B. Types of persons (Normal and Heart) SS b   | 6046.35       | 1    | 6046.35      | 17.69 < .01                                |
| Interaction (AXB) SS ab                       | 324.48        | 1    | 324.48       | 0.95 > .05                                 |
| SS Within Cell                                | 53318.28      | 156  | 341.78       | d.f. .05 level 1.98<br>d.f. .01 level 2.63 |

Results reveal from table no. 5.01.2 that types of mental health have significant effect on life stress (F ratio found 60.79 at .01 level). Also types of person (normal and heart) have significant effect on life stress (F ratio found 17.69 at .01 level). But there is no significant effect found in interaction of types of mental health and types of person (F ratio found 0.95 at .05 level). Thus the hypothesis stating 5, "There is no significant effect of types of mental health (Good and Poor), and types of person (Normal persons and Heart patients) on life stress" is rejected.

**5.02 To study the significant effect of types of mental health (Good and Poor), and Types of persons (Normal persons and Heart patients) on Anxiety as life stress factor.**

Table 5.02.1 shows the mean and SD value of types of mental health and types of persons on Anxiety.

Table No. 5.02.1

| Sub Groups            |      | Types of persons |       | Total |  |
|-----------------------|------|------------------|-------|-------|--|
|                       |      | Normal           | Heart |       |  |
| Type of Mental Health | Good | N                | 39    | 40    |  |
|                       |      | Mean             | 14.41 | 16.65 |  |
|                       |      | S.D.             | 3.95  | 3.51  |  |
|                       | Poor | N                | 42    | 39    |  |
|                       |      | Mean             | 19.12 | 20.64 |  |
|                       |      | S.D.             | 4.06  | 4.15  |  |
|                       |      | N                | 81    | 79    |  |
|                       |      | Mean             | 16.85 | 18.62 |  |
|                       |      | S.D.             | 4.63  | 4.31  |  |
|                       |      |                  |       | 4.55  |  |

Table shows that Poor mental health persons has higher anxiety (mean 19.85) than good mental health persons (mean 15.54). Results reveal that Heart patients have higher anxiety (mean 18.62) than normal persons (mean 16.85). Result shows that poor mental health normal persons have higher anxiety (mean 19.12) than good mental health normal persons (mean 14.41). Also poor mental health heart patients have higher anxiety (mean 20.64) than good mental health heart patients (mean 16.65). Table shows that Good mental health heart patients have higher anxiety (mean 16.65) than good mental health normal persons (mean 14.41). Also poor mental health heart persons have higher anxiety (mean 20.64) than poor mental health normal persons (mean 19.12).

To find out the of types of mental health (Good and poor) and types of persons (Normal persons and Heart patients) effect on anxiety as life stress factor, 2X2 factorial design has been used and

the analysis of variance is calculated. The results are reflected in Table. 5.02.2.

Table no. 5.02.2

| Source of Variance                            | Sum of Square | d.f. | Mean Squares | F ratio                                    |
|---|---------------|------|--------------|--|
| A. Type of Mental Health (Good and Poor) SS a | 756.18        | 1    | 756.18       | 49.11 < .01                                |
| B. Types of persons (Normal and Heart) SS b   | 141.38        | 1    | 141.38       | 9.18 < .01                                 |
| Interaction (AXB) SS ab                       | 5.15          | 1    | 5.15         | 0.33 > .05                                 |
| SS Within Cell                                | 2401.92       | 156  | 15.40        | d.f. .05 level 1.98<br>d.f. .01 level 2.63 |

Results of table no. 5.02.2 show that types of mental health (Good and poor) have significant effect on anxiety (F ratio found 49.11 at .01 level). Also types of person (Normal persons and heart patients) have significant effect on anxiety (F ratio found 9.18 at .01 level). But interaction of types of mental health and types of persons has not significant effect on anxiety (F ratio found 0.33 at .05 level). Thus the hypothesis 5 (a), "There is no significant effect of types of mental health (Good and Poor) and types of person (Normal persons and Heart patients) on Anxiety as life stress factor" is rejected.

**5.03 To study the significant effect of types of mental health (Good and Poor), and types of persons (Normal persons and Heart patients) on Stress as life stress factor.**

Table 5.03.1 shows the mean and SD value of type mental health and types of persons on stress.

Table No. 5.03.1

| Sub Groups            |      | Types of persons |       | Total |  |
|-----------------------|------|------------------|-------|-------|--|
|                       |      | Normal           | Heart |       |  |
| Type of Mental Health | Good | N                | 39    | 79    |  |
|                       |      | Mean             | 15.44 | 16.43 |  |
|                       |      | S.D.             | 3.42  | 3.83  |  |
|                       | Poor | N                | 42    | 39    |  |
|                       |      | Mean             | 17.93 | 21.13 |  |
|                       |      | S.D.             | 2.83  | 4.51  |  |
|                       |      | N                | 81    | 79    |  |
|                       |      | Mean             | 16.73 | 18.75 |  |
|                       |      | S.D.             | 3.35  | 4.78  |  |

The table 5.03.1 shows that Poor mental health persons has higher stress (mean 19.47) than good mental health persons (mean 15.94). Heart patients have higher stress (mean 18.75) than normal persons (mean 16.73). It is evident from table no. 5.03.1 that poor mental health normal persons have higher stress (mean 17.93) than good mental health normal persons (mean 15.44). Also poor mental health heart patients have higher stress (mean 18.28) than good mental health heart patients (mean 17.15). Results show that Good mental health heart patients have high stress (mean 16.43) than good mental health normal persons (mean 15.44). Poor mental health heart patients have high stress (mean 21.13) than poor mental health normal persons (mean 17.93).

To find out the effect of types of mental health (Good and poor) and types of persons (Normal persons and Heart patients) on stress as life stress factor, 2X2 factorial design has been used and the

analysis of variance is calculated. The results are reflected in Table.

#### 5.03.2.

Table no. 5.03.2

| Source of Variance                            | Sum of Square | d.f. | Mean Squares | F ratio                                    |
|---|---------------|------|--------------|--|
| A. Type of Mental Health (Good and Poor) SS a | 293.98        | 1    | 293.98       | 38.09 < .01                                |
| B. Types of persons (Normal and Heart) SS b   | 99.61         | 1    | 99.61        | 12.91 < .01                                |
| Interaction (AXB) SS ab                       | 27.74         | 1    | 27.74        | 3.59 < .01                                 |
| SS Within Cell                                | 2118.51       | 156  | 13.58        | d.f. .05 level 1.98<br>d.f. .01 level 2.63 |

Results show that types of mental health (good and poor) have significant effect on stress (F ratio found 38.09 at b.01 level). Types of persons also have significant effect on stress (F ratio found 12.91 at .01 level). Interaction of types of mental health and types of persons also has significant effect on stress (F ratio found 3.59 at .01 level). Thus the hypothesis 5 (b) "There is no significant effect of types of mental health (Good and Poor) and types of person (Normal persons and Heart patients) on Stress as life stress factor" is rejected.

#### 5.04 To study the significant effect of types of mental health (Good and Poor), and Types of persons (Normal persons and Heart patients) on Depression.

Table 5.04.1 shows the mean and SD value of type mental health and types of persons on depression.

Results of table no. 5.04.1 show that poor mental health persons have higher depression (mean 19.35) than good mental health persons (mean 16.18). Heart patients have higher depression (mean 18.86) than normal persons (mean 16.73). Poor mental health normal persons have higher depression (mean 17.86) than good mental health normal persons (mean 15.51).

Table No. 5.04.1

| Sub Groups            |      | Types of persons |       | Total |  |
|-----------------------|------|------------------|-------|-------|--|
|                       |      | Normal           | Heart |       |  |
| Type of Mental Health | Good | N                | 39    | 40    |  |
|                       |      | Mean             | 15.51 | 16.43 |  |
|                       |      | S.D.             | 2.81  | 3.46  |  |
|                       | Poor | N                | 42    | 39    |  |
|                       |      | Mean             | 17.86 | 20.95 |  |
|                       |      | S.D.             | 2.92  | 3.15  |  |
|                       |      | N                | 81    | 79    |  |
|                       |      | Mean             | 16.73 | 18.86 |  |
|                       |      | S.D.             | 3.08  | 3.89  |  |
|                       |      |                  |       | 3.65  |  |

Also poor mental health heart patients have higher depression (mean 20.65) than good mental health heart patients (mean 16.83). Results show that Good mental health heart patients have higher depression (mean 16.83) than good mental health normal persons (mean 15.51). Also poor mental health heart patients have higher depression (mean 20.95) than poor mental health normal persons (mean 17.86).

To find out the effect of types of mental health (Good and poor) and types of persons (Normal persons and Heart patients) on

depression as life stress factor, 2X2 factorial design has been used and the analysis of variance is calculated. The results are reflected in Table. no. 5.04.2.

**Table no. 5.04.2**

| Source of Variance                            | Sum of Square | d.f. | Mean Squares | F ratio                                    |
|---|---------------|------|--------------|--|
| A. Type of Mental Health (Good and Poor) SS a | 417.97        | 1    | 417.97       | 43.69 < .01                                |
| B. Types of persons (Normal and Heart) SS b   | 193.75        | 1    | 193.75       | 20.25 < .01                                |
| Interaction (AXB) SS ab                       | 31.63         | 1    | 31.63        | 3.31 < .01                                 |
| SS Within Cell                                | 1492.56       | 156  | 9.57         | d.f. .05 level 1.98<br>d.f. .01 level 2.63 |

Results of table 5.04.2 show that, types of mental health (A&B) have significant effect on depression (F ratio found 43.69 at .01 level). Also types of persons (normal and heart) have significant effect on depression (F ratio found 20.25 at .01 level). Interaction of types of mental health and types of persons has significant effect on depression (F ratio found 3.31 at .01 level). Thus the hypothesis stating 5 (c), "There is no significant effect of types of mental health (Good and Poor) and types of person (Normal persons and Heart patients) on Depression as life stress factor" is rejected.

### **5.05 To study the significant effect of types of mental health (Good and Poor), and Types of persons (Normal persons and Heart patients) on Regression as life stress factor.**

Table 5.05.1 shows the mean and SD value of type mental health and types of persons on regression.

Table results shows that Poor mental health persons have higher regression (mean 20.44) than good mental health persons (mean 15.62). Heart patients have higher regression (mean 19.13) than normal persons (mean 17.02). It is notified that poor mental health normal persons have higher regression (mean 19.02) than good mental health normal persons (mean 14.87).

Table No. 5.05.1

| Sub Groups            |      |      | Types of persons |       | Total |  |
|-----------------------|------|------|------------------|-------|-------|--|
|                       |      |      | Normal           | Heart |       |  |
| Type of Mental Health | Good | N    | 39               | 40    | 79    |  |
|                       |      | Mean | 14.87            | 16.35 | 15.62 |  |
|                       |      | S.D. | 3.19             | 3.72  | 3.52  |  |
|                       | Poor | N    | 42               | 39    | 81    |  |
|                       |      | Mean | 19.02            | 21.97 | 20.44 |  |
|                       |      | S.D. | 4.05             | 4.93  | 4.71  |  |
|                       |      | N    | 81               | 79    | 160   |  |
|                       |      | Mean | 17.02            | 19.13 | 18.06 |  |
|                       |      | S.D. | 4.19             | 5.17  | 4.81  |  |

Also poor mental health heart patients have higher regression (mean 21.97) than good mental health heart patients (mean 16.35). Results show that Good mental health heart patients have high regression (mean 16.83) than good mental health normal persons (mean 15.51) and poor mental health heart persons has high regression (mean 20.95) than poor mental health normal persons (mean 17.86).

To find out the effect of types of mental health (Good and poor) and types of persons (Normal persons and Heart patients) on regression as life stress factor, 2X2 factorial design has been used

and the analysis of variance is calculated. The results are reflected in Table. no 5.05.2.

**Table no. 5.05.2**

| Source of Variance                            | Sum of Square | d.f. | Mean Squares | F ratio                                    |
|---|---------------|------|--------------|--|
| A. Type of Mental Health (Good and Poor) SS a | 954.90        | 1    | 954.90       | 59.08 < .01                                |
| B. Types of persons (Normal and Heart) SS b   | 195.96        | 1    | 195.96       | 12.12 < .01                                |
| Interaction (AXB) SS ab                       | 21.66         | 1    | 21.66        | 1.34 > .05                                 |
| SS Within Cell                                | 2521.41       | 156  | 16.16        | d.f. .05 level 1.98<br>d.f. .01 level 2.63 |

Results show that types of mental health have significant effect on regression (F ratio found 59.08 at .01 level). Also Types of persons has significant effect on regression (F ratio found 12.12 at .01 level). But Interaction of types of mental health and types of persons has not significant effect on regression (F ratio found 1.34 at .05 level). Thus hypothesis 5 (d) "There is no significant effect of types of mental health (Good and Poor) and types of person (Normal persons and Heart patients) on Regression as life stress factor" is rejected.

#### **5.06 To study the significant effect of types of mental health (Good and Poor), and Types of persons (Normal persons and Heart patients) on Fatigue as life stress factor.**

Table 5.06.1 shows the mean and SD value of type mental health and types of persons on fatigue.

Table No. 5.06.1

| Sub Groups            |      | Types of persons |       | Total |  |
|-----------------------|------|------------------|-------|-------|--|
|                       |      | Normal           | Heart |       |  |
| Type of Mental Health | Good | N                | 39    | 79    |  |
|                       |      | Mean             | 12.85 | 14.19 |  |
|                       |      | S.D.             | 4.30  | 4.71  |  |
|                       | Poor | N                | 42    | 81    |  |
|                       |      | Mean             | 17.14 | 19.81 |  |
|                       |      | S.D.             | 5.43  | 6.44  |  |
|                       |      | N                | 81    | 160   |  |
|                       |      | Mean             | 15.07 | 17.04 |  |
|                       |      | S.D.             | 5.34  | 6.30  |  |

Table no 5.06.1 shows that heart patients have higher fatigue level (mean 19.05) than normal persons (mean 15.07). Poor mental health persons have higher fatigue (mean 19.81) than good mental health (mean 14.19). Results show that good mental health heart patients have higher fatigue (mean 15.50) than good mental health normal persons (mean 12.85). Poor mental health heart patients also have high fatigue value (mean 22.69) than poor mental health normal persons (mean 17.14). It is also evident from table that poor mental health normal persons have higher fatigue value (mean 17.14) than good mental health normal persons (mean 12.85). Poor mental health heart patients have higher fatigue (mean 22.69) than good mental health heart patients (mean 15.46).

To find out the of types of mental health (Good and poor) and types of persons (Normal persons and Heart patients) effect on

fatigue as life stress factor, 2X2 factorial design has been used and the analysis of variance is calculated. The results are reflected in Table. no 5.06.2.

Table no. 5.06.2

| Source of Variance                            | Sum of Square | d.f. | Mean Squares | F ratio                                    |
|---|---------------|------|--------------|--|
| A. Type of Mental Health (Good and Poor) SS a | 1318.77       | 1    | 1318.77      | 47.93 <.01                                 |
| B. Types of persons (Normal and Heart) SS b   | 672.33        | 1    | 672.33       | 24.43 < .01                                |
| Interaction (AXB) SS ab                       | 83.77         | 1    | 83.77        | 3.04 < .01                                 |
| SS Within Cell                                | 4292.53       | 156  | 27.52        | d.f. .05 level 1.98<br>d.f. .01 level 2.63 |

Table 5.06.2 shows that types of mental health have significant effect on fatigue (F ratio found 47.93 at .01 level). Also types of persons have significant effect on fatigue (F ratio found 24.43 at .01 level). Interaction of types of mental health and types of persons also has significant effect on fatigue (F ratio found 3.04 at .01 level). Thus the hypothesis stating that 5 (e), "There is no significant effect of types of mental health (Good and Poor) and types of person (Normal persons and Heart patients) on Fatigue as life stress factor," is rejected.

5.07 To study the significant effect of type of mental health (Good and Poor), and Type of person (Normal persons and Heart patients) on Guilt as life stress factor.

Table 5.07.1 shows the mean and SD value of type mental health and types of persons on Guilt.

**Table No. 5.07.1**

| Sub Groups            |      | Types of persons |       | Total |  |
|-----------------------|------|------------------|-------|-------|--|
|                       |      | Normal           | Heart |       |  |
| Type of Mental Health | Good | N                | 39    | 79    |  |
|                       |      | Mean             | 12.87 | 14.65 |  |
|                       |      | S.D.             | 3.22  | 4.06  |  |
|                       | Poor | N                | 42    | 81    |  |
|                       |      | Mean             | 17.57 | 16.51 |  |
|                       |      | S.D.             | 3.50  | 2.48  |  |
|                       |      | N                | 81    | 160   |  |
|                       |      | Mean             | 15.31 | 15.57 |  |
|                       |      | S.D.             | 4.10  | 3.48  |  |

Results of table no. 5.07.1 shows that heart patients have higher guilt value (mean 15.57) than normal persons (mean 15.31). It is noteworthy from table that poor mental health persons has high guilt value (mean 17.06) than good mental health persons (mean 13.77). Results also show that poor mental health normal persons have higher guilt (mean 17.57) than good mental health normal persons (mean 12.87). Poor mental health heart patients also have higher guilt (mean 16.51) than good mental health heart patients (mean 14.65). It is evident from table that Good mental health heart patients have higher guilt (mean 14.65) than good mental health normal patients (mean 12.87). But poor mental health normal persons have higher guilt (mean 17.57) than poor mental health heart patients (mean 16.51).

To find out the effect of types of mental health (Good and poor) and types of persons (Normal persons and Heart patients) on guilt as life stress factor, 2X2 factorial design has been used and the analysis of variance is calculated. The results are reflected in Table no. 5.07.2.

Table no. 5.07.2

| Source of Variance                            | Sum of Square | d.f. | Mean Squares | F ratio                                    |
|---|---------------|------|--------------|--|
| A. Type of Mental Health (Good and Poor) SS a | 430.26        | 1    | 430.26       | 37.85 < .01                                |
| B. Types of persons (Normal and Heart) SS b   | 5.17          | 1    | 5.17         | 0.46 > .05                                 |
| Interaction (AXB) SS ab                       | 80.40         | 1    | 80.40        | 7.07 < .01                                 |
| SS Within Cell                                | 1773.49       | 156  | 11.37        | d.f. .05 level 1.98<br>d.f. .01 level 2.63 |

Result shows that types of mental health (Good and poor) have significant effect on guilt (F ratio found 37.85 at .01 level). But types of persons (Normal persons and heart patients) have not significant effect on guilt (F ratio found 0.46 at .05 level). Interaction of both groups has significant effect on guilt (F ratio found 7.07 at .01 level). Thus the hypothesis 5 (f), "There is no significant effect of types of mental health (Good and Poor) and types of person (Normal persons and Heart patients) on guilt as life stress factor" is rejected.

5.08 To study the significant effect of types of mental health (Good and Poor) and Types of persons (Normal persons and Heart patients) on Extraversion as life stress factor.

Table 5.08.1 shows the mean and SD value of types of mental health and types of persons on extraversion.

**Table no. 5.08.1**

| Sub Groups            |      | Types of persons |       | Total |  |
|-----------------------|------|------------------|-------|-------|--|
|                       |      | Normal           | Heart |       |  |
| Type of Mental Health | Good | N                | 39    | 79    |  |
|                       |      | Mean             | 18.92 | 18.28 |  |
|                       |      | S.D.             | 2.24  | 2.84  |  |
|                       | Poor | N                | 42    | 81    |  |
|                       |      | Mean             | 16.71 | 16.16 |  |
|                       |      | S.D.             | 2.52  | 2.64  |  |
|                       |      | N                | 81    | 160   |  |
|                       |      | Mean             | 17.78 | 17.21 |  |
|                       |      | S.D.             | 2.62  | 2.93  |  |

Results of table 5.08.1 show that Good mental health persons have higher extraversion quality (mean 18.28) than poor mental persons (mean 16.16). Also Normal persons have higher extraversion quality (mean 17.78) than heart patients (mean 16.62). Results show that Good mental health normal persons have higher extraversion quality (mean 18.92) than poor mental health normal persons (mean 16.71). Also Good mental health heart patients have high extraversion quality (mean 17.65) than poor mental health heart patients (mean 15.56). It is reviled from table that Good mental health normal persons have higher extraversion quality (mean 18.92) than good mental health heart patients (mean 17.65) and poor mental health normal persons also have higher extraversion quality (mean 16.71) than poor mental health heart patients (mean 15.56).

Table no. 5.08.2

| Source of Variance                            | Sum of Square | d.f. | Mean Squares | F ratio                                    |
|---|---------------|------|--------------|--|
| A. Type of Mental Health (Good and Poor) SS a | 184.27        | 1    | 184.27       | 25.44 < .01                                |
| B. Types of persons (Normal and Heart) SS b   | 58.67         | 1    | 58.67        | 8.10 < .01                                 |
| Interaction (AXB) SS ab                       | 0.15          | 1    | 0.15         | 0.02 > .05                                 |
| SS Within Cell                                | 1130.03       | 156  | 7.24         | d.f. .05 level 1.98<br>d.f. .01 level 2.63 |

To find out the effect of types of mental health (Good and poor) and types of persons (Normal persons and Heart patients) on extraversion as life stress factor, 2X2 factorial design has been used and the analysis of variance is calculated. The results are reflected in Table no. 5.08.2.

Table 5.08.2 shows that types of mental health (good and poor) have significant effect on extraversion (F ratio found 25.44 at .01 level). Also types of persons (Normal persons and heart patients) have significant effect on extraversion (F ratio found 8.10 at .01 level). But interaction of both groups has no significant effect on extraversion (F ratio found 0.02 at .05 level. Thus the hypothesis stating 5 (g), "There is no significant effect of types of mental health (Good and Poor) and types of person (Normal persons and Heart patients) on Extraversion as life stress factor" is rejected.

5.09 To study the significant effect of mental health (Good and Poor), and Type of person (Normal persons and Heart patients) on Arousal.

Table no. 5.09.1

| Sub Groups            |      | Types of persons |       | Total |  |
|-----------------------|------|------------------|-------|-------|--|
|                       |      | Normal           | Heart |       |  |
| Type of Mental Health | Good | N                | 39    | 79    |  |
|                       |      | Mean             | 18.15 | 18.43 |  |
|                       |      | S.D.             | 2.57  | 3.44  |  |
|                       | Poor | N                | 42    | 39    |  |
|                       |      | Mean             | 17.62 | 18.67 |  |
|                       |      | S.D.             | 2.38  | 2.34  |  |
|                       |      | N                | 81    | 160   |  |
|                       |      | Mean             | 17.88 | 18.54 |  |
|                       |      | S.D.             | 2.47  | 2.93  |  |
|                       |      |                  |       | 2.72  |  |

Table 5.09.1 shows the mean and SD value of type mental health and types of persons on arousal.

Results of table 5.09.1 reveal that heart patients have higher arousal value (mean 18.54) than normal persons (mean 17.88). Good mental health persons have higher arousal value (mean 18.22) than poor mental health persons (mean 18.12). It is evident from table that good mental health heart patients have higher arousal value (mean 18.43) than good mental health normal persons (mean 18.15). Poor mental health heart patients have higher arousal value (mean 18.67) than poor mental health normal persons (mean 17.62). It is revealing from table that good mental health normal persons have high arousal value (mean 18.15) than poor mental health normal persons (mean 17.62).

But poor mental health heart patients have high arousal value (mean 18.67) than good mental health heart patients (mean 18.43).

Table no. 5.09.2

| Source of Variance                            | Sum of Square | d.f. | Mean Squares | F ratio                                    |
|---|---------------|------|--------------|--|
| A. Type of Mental Health (Good and Poor) SS a | 0.86          | 1    | 0.86         | 0.12 < .05                                 |
| B. Types of persons (Normal and Heart) SS b   | 17.38         | 1    | 17.38        | 2.35 < .05                                 |
| Interaction (AXB) SS ab                       | 6.02          | 1    | 6.02         | 0.81 > .05                                 |
| SS Within Cell                                | 1153.42       | 156  | 7.39         | d.f. .05 level 1.98<br>d.f. .01 level 2.63 |

To find out the effect of types of mental health (Good and poor) and types of persons (Normal persons and Heart patients) on arousal as life stress factor, 2X2 factorial design has been used and the analysis of variance is calculated. The results are reflected in Table no. 5.09.2.

Result shows that types of mental health have no significant effect on arousal (F ratio found 0.12 at .05 level). But types of persons have significant effect on arousal (F ratio found 2.35 at .05 level). Also interaction of both groups has no significant effect (F ratio found 0.81 at .05 level). Thus the hypothesis 5 (h) "There is no significant effect of types of mental health (Good and Poor) and types of person (Normal persons and Heart patients) on Arousal as life stress factor" is rejected.

## Part F

**Study the effect of types of behaviour (Type A and Type B), and Types of mental health (Good and Poor) on life stress of Normal persons and Heart patients.**

In this section an attempt has been made to study the effect of types of behaviour (Type A and Type B) and types of mental health (Good and poor) on different life stress factors. Persons having score 61 and above are type A behaviour persons, and persons having score 59 and above are type B behaviour persons. Good Mental health persons are categories on the basis of  $Q_3$  (186) and poor mental health persons categories on the basis of  $Q_1$  (163) in normal persons and heart patients.

**6. To see the effect of types of behaviour (A & B), mental health (good and poor) on life stress of normal persons and heart patients.**

The table no. 6.01 shows the mean and SD value of Types of Mental Health (Good and Poor) and Types of behaviour (A&B) of normal persons and heart patients life stress.

Results of table no. 6.01 shows that Poor mental health persons have higher life stress (mean 140.11) than good mental health persons (mean 127.93). Also it is notified from the table that type B behaviour person has high life stress (mean 133.59) than type A behaviour person (mean 131.47). Results reveal that Type A Poor mental health persons have high stress (mean 137.85) than Type A

good mental health persons (mean 126.61). Also Type B poor mental health persons have higher life stress (142.94) than Type B behaviour good mental health persons (mean 129.06). Result shows that Good mental health Type B persons have high life stress (mean 129.06) than Good mental health types A behaviour persons. It reveal from results that Poor mental health Type B persons have high life stress (mean 142.94) than Poor mental health Type A persona (mean 137.95).

Table No. 6.01

| Sub Groups            |      |      | Type of Behaviour |        | Total  |
|-----------------------|------|------|-------------------|--------|--------|
| Type of Mental Health | Good | N    | Type A            | Type B |        |
|                       |      | N    | 28                | 33     | 61     |
|                       |      | Mean | 126.01            | 129.06 | 127.93 |
|                       | Poor | S.D. | 20.04             | 13.08  | 16.54  |
|                       |      | N    | 21                | 16     | 37     |
|                       |      | Mean | 137.95            | 142.94 | 140.11 |
|                       |      | S.D. | 19.61             | 17.54  | 18.66  |
|                       |      | N    | 49                | 49     | 98     |
|                       |      | Mean | 131.47            | 133.59 | 132.53 |
|                       |      | S.D. | 20.45             | 15.92  | 18.26  |

To find out the effect of types of mental health (Good and poor) and types of behaviour (type A and type B) of normal persons and heart patients on life stress, 2x2 factorial design is apply on data and the analysis of variance is calculated. The results are reflected in table no. 6.02

Table No. 6.02

| Source of Variance                               | Sum of Square | d.f. | Mean Squares | F ratio                                    |
|--|---------------|------|--------------|--|
| A. Type of Mental Health (Good and Poor)<br>SS a | 3611.72       | 1    | 3611.72      | 11.86 < .01                                |
| B. Type of Behaviour (Type A and Type B)<br>SS b | 314.15        | 1    | 314.15       | 1.03 > .05                                 |
| Interaction (AXB)<br>SS ab                       | 36.39         | 1    | 36.39        | 0.12 > .05                                 |
| SS Within Cell                                   | 28622.45      | 94   | 304.49       | d.f. .05 level 1.98<br>d.f. .01 level 2.63 |

Results of table 6.2 show that types of mental health (Good and poor) have significant effect on life stress (F ratio found 11.86 at .01 level) but types of behaviour (A & B) have not significant effect on life stress (F ratio found 1.03 at .05 level). It is also notify that interaction of types of mental health and types of behaviour has no significant effect on life stress (F ratio found 0.12 at .05 level). Thus the hypothesis stating that, "There is no significant effect of type of behaviour (A & B), mental health (good and poor) on life stress of normal persons and heart patients," is rejected.

#### 6.01 To see the effect of types of behaviour (A & B) and types of mental health (good and poor) on anxiety as life stress factor of normal persons and heart patients

The table no. 6.01.1 show the mean and SD value of types of mental health (Good and Poor) and types of behaviour (Type A and Type B) on anxiety of normal persons and heart patients.

Results of table no. 6.01.1 show that Poor mental health persons have higher anxiety (mean 17.73) than good mental health persons (mean 15.47). Type A behaviour persons have higher anxiety (mean 16.35) than type B behaviour persons (mean 16.31). Results reveal that Good mental health type A behaviour persons have high anxiety (mean 16.11) than Good mental health Type B behaviour persons (mean 14.94). But type B behaviour Poor mental health persons have high anxiety (mean 19.12) than Type A behaviour good mental health person (mean 16.67).

**Table No. 6.01.1**

| Sub Groups            |      |      | Type of Behaviour |        | Total |  |
|-----------------------|------|------|-------------------|--------|-------|--|
|                       |      |      | Type A            | Type B |       |  |
| Type of Mental Health | Good | N    | 28                | 33     | 61    |  |
|                       |      | Mean | 16.11             | 14.94  | 15.47 |  |
|                       |      | S.D. | 4.25              | 3.32   | 3.79  |  |
|                       | Poor | N    | 21                | 16     | 37    |  |
|                       |      | Mean | 16.67             | 19.12  | 17.73 |  |
|                       |      | S.D. | 3.68              | 4.57   | 4.21  |  |
|                       |      | N    | 49                | 49     | 98    |  |
|                       |      | Mean | 16.35             | 16.31  | 16.33 |  |
|                       |      | S.D. | 3.99              | 4.22   | 4.08  |  |

Table Result shows that Type A behaviour Poor mental health persons have high anxiety (mean 16.67) than Type A behaviour Good mental Health persons (mean 16.10). Also type B behaviour poor mental health persons have high anxiety (mean 19.12) than type B behaviour good mental health persons (mean 19.94).

To find out the effect of types of mental health (Good and poor) and types of behaviour (type A and type B) of normal persons and heart patients on anxiety as life stress factor, 2x2 factorial design is apply on data and the analysis of variance is calculated. The results are reflected in table no. 6.01.2.

The result of table no. 6.01.2 shows that types of mental health (Good and poor) have significant effect on anxiety (F ratio found 8.43 at .01 level). But types of behaviour have not significant effect on anxiety (F ratio found 0.63 at .05 level). Interaction of both groups also has significant effect on anxiety (F ratio found 4.92 at .01 level). Thus the hypotheses stating 6 (a), "There is no significant effect of type of behaviour (A & B), mental health (good and poor) on anxiety of normal persons and heart patients," is rejected.

Table no. 6.02.2

| Source of Variance                                  | Sum of Square | d.f. | Mean Squares | F ratio                                    |
|---|---------------|------|--------------|--|
| A. Type of Mental Health<br>(Good and Poor)<br>SS a | 127.83        | 1    | 127.83       | 8.43 < .01                                 |
| B. Type of Behaviour<br>(Type A and Type B)<br>SS b | 9.46          | 1    | 9.46         | 0.62 > .05                                 |
| Interaction (AXB)<br>SS ab                          | 74.65         | 1    | 74.65        | 4.92 < .01                                 |
| SS Within Cell                                      | 1424.97       | 94   | 15.16        | d.f. .05 level 1.98<br>d.f. .01 level 2.63 |

6.02 To see the significant effect of types of behaviour (A & B) and types of mental health (good and poor) on Stress as life stress factor of normal persons and heart patients.

The table no. 6.02.1 show the mean and SD value of types of behaviour (Type A and Type B) and types of mental health (Good and Poor) on stress as life stress factor of normal persons and heart patients.

The results of table 6.02.1 show that Type B behaviour persons have higher stress (mean 16.86) than type A behaviour persons (mean 16.61). Results shows that Poor mental health persons have higher stress (mean 17.81) than Good mental health persons (mean 16.08). it is notified from results that Type A Poor mental health persons have higher stress (mean 18.14) than Type A behaviour good mental health persons (mean 15.46). Also Type B behaviour poor mental health persons have higher stress (mean 17.81) than Type B behaviour good mental health persons (mean 16.08). Table 6.02.1 shows that Type B behaviour Good mental health persons have higher stress (mean 16.60) than type A behaviour Good mental health persons (mean 15.46). Results of table shows that Poor mental health Type A behaviour person have high stress (mean 18.14) than poor mental health type B behaviour person (mean 17.37).

To find out the effect of types of mental health (Good and poor) and types of behaviour (type A and type B) of normal persons and heart patients on stress as life stress factor, 2x2 factorial design is apply on data and the analysis of variance is calculated. The results are reflected in table no. 6.02.2

Table no. 6.02.1

| Sub Groups            |      | Type of Behaviour |        | Total |  |
|-----------------------|------|-------------------|--------|-------|--|
|                       |      | Type A            | Type B |       |  |
| Type of Mental Health | Good | N                 | 28     | 33    |  |
|                       |      | Mean              | 15.46  | 16.60 |  |
|                       |      | S.D.              | 3.96   | 3.75  |  |
|                       | Poor | N                 | 21     | 16    |  |
|                       |      | Mean              | 18.14  | 17.37 |  |
|                       |      | S.D.              | 3.00   | 4.35  |  |
|                       |      | N                 | 49     | 49    |  |
|                       |      | Mean              | 16.61  | 16.86 |  |
|                       |      | S.D.              | 3.79   | 3.93  |  |
|                       |      |                   |        | 98    |  |
|                       |      |                   |        | 16.73 |  |
|                       |      |                   |        | 3.84  |  |

The results of table 6.02.2 show that types of mental health (good and Poor) have significant effect on stress (F ratio found 4.74 at .01 level).

Table 6.02.2

| Source of Variance                               | Sum of Square | d.f. | Mean Squares | F ratio                                    |
|--|---------------|------|--------------|--|
| A. Type of Mental Health (Good and Poor)<br>SS a | 67.48         | 1    | 67.48        | 4.74 < .01                                 |
| B. Type of Behaviour (Type A and Type B)<br>SS b | 0.79          | 1    | 0.79         | 0.05 > .05                                 |
| Interaction (AXB)<br>SS ab                       | 20.70         | 1    | 20.70        | 1.45 > .05                                 |
| SS Within Cell                                   | 1337.16       | 94   | 14.23        | d.f. .05 level 1.98<br>d.f. .01 level 2.63 |

But type of behaviour (Type A and Type B) has no significant effect on stress (F ratio found 0.05 at .05 level). Result of table 6.02.2

shows that interaction in both groups also has no significant effect on stress (F ratio found 1.46 at .05 level). Thus the hypothesis no. 6(b), that "There is no significant effect of type of behaviour (A & B), mental health (good and poor) on Stress of normal persons and heart patients", is rejected.

**6.03 To see, the effect of types of behaviour (A & B) and types of mental health (good and poor) on Depression as life stress factor of normal persons and heart patients.**

The table no. 6.03.1 shows the mean and SD value of types of behaviour (A & B) and types of mental health (Good and poor) on depression as life stress factor of normal persons and heart patients

The results reveal that Poor mental health persons have higher depression (mean 17.97) than good mental health persons (mean 16.05). Type A behaviour persons have higher depression (mean 16.84) than type B behaviour persons (mean 16.71). Result shows that Poor mental health Type A behaviour persons have higher depression (mean 18.00) than Good mental health type A behaviour persons (mean 15.96). Also poor mental health type B behaviour person has higher depression (mean 17.94) than Good mental health type A behaviour persons (mean 16.12). Table shows that Type A behaviour poor mental health persons have higher depression (mean 18.00) than Type A behaviour good mental health persons (mean 15.96). In type B poor mental health person also have high depression (mean 17.94) than Type B behaviour good mental health person (mean 16.12).

Table No. 6.03.1

| Sub Groups            |      |      | Type of Behaviour |        | Total |  |
|-----------------------|------|------|-------------------|--------|-------|--|
|                       |      |      | Type A            | Type B |       |  |
| Type of Mental Health | Good | N    | 28                | 33     | 61    |  |
|                       |      | Mean | 15.96             | 16.12  | 16.05 |  |
|                       |      | S.D. | 3.63              | 2.76   | 3.16  |  |
|                       | Poor | N    | 21                | 16     | 37    |  |
|                       |      | Mean | 18.00             | 17.94  | 17.97 |  |
|                       |      | S.D. | 3.63              | 2.46   | 3.14  |  |
|                       |      | N    | 49                | 49     | 98    |  |
|                       |      | Mean | 16.83             | 16.71  | 16.78 |  |
|                       |      | S.D. | 3.73              | 2.78   | 3.27  |  |

To find out the effect of types of mental health (Good and poor) and types of behaviour (type A and type B) of normal persons and heart patients on depression as life stress factor, 2x2 factorial design is apply on data and the analysis of variance is calculated. The results are reflected in table no. 6.03.2

The table no. 6.03.2 shows that types of mental health (good and poor) have a significant effect on depression (F ratio found 8.30 at .01 level). Table shows that types of behaviour (A&B) have not significant effect on depression (F ratio found 0.00 at .05 level). Also interaction within groups has no significant effect on depression (F ratio found 0.02 at .05 level).

Table no. 6.03.2

| Source of Variance                                  | Sum of Square | d.f. | Mean Squares | F ratio                                    |
|---|---------------|------|--------------|--|
| A. Type of Mental Health<br>(Good and Poor)<br>SS a | 84.24         | 1    | 84.24        | 8.30 < .01                                 |
| B. Type of Behaviour<br>(Type A and Type B)<br>SS b | 0.05          | 1    | 0.05         | 0.00 > .05                                 |
| Interaction (AXB)<br>SS ab                          | 0.27          | 1    | 0.27         | 0.02 > .05                                 |
| SS Within Cell                                      | 953.42        | 94   | 10.14        | d.f. .05 level 1.98<br>d.f. .01 level 2.63 |

Thus the hypothesis stating 6 (C), that "There is no significant effect of type of behaviour (A & B), mental health (good and poor) on Depression of normal persons and heart patients" Is rejected.

**6.04 To see, the effect of types of behaviour (A & B) and types of mental health (good and poor) on Regression as life stress factor of normal persons and heart patients.**

The table no. 6.04.1 shows the mean and SD value of types of behaviour (A & B) and types of mental health (Good and poor) on regression as life stress factor of normal persons and heart patients

The result of table no. 6.04.1 shows that Poor mental health persons have higher regression (mean 18.50) than good mental health persons (mean 16.05). Type B behaviour persons have higher regression (mean 17.31) than Type A behaviour persons (mean 16.33). Result shows that Type A behaviour poor mental health

persons have higher regression (mean 17.76) than type A behaviour good mental health persons (mean 15.25).

Table No. 6.04.1

| Sub Groups            |      |      | Type of Behaviour |        | Total |  |
|-----------------------|------|------|-------------------|--------|-------|--|
|                       |      |      | Type A            | Type B |       |  |
| Type of Mental Health | Good | N    | 28                | 33     | 61    |  |
|                       |      | Mean | 15.25             | 16.73  | 16.05 |  |
|                       |      | S.D. | 4.12              | 3.55   | 3.86  |  |
|                       | Poor | N    | 21                | 16     | 37    |  |
|                       |      | Mean | 17.76             | 18.50  | 18.50 |  |
|                       |      | S.D. | 3.05              | 4.50   | 3.71  |  |
|                       |      | N    | 49                | 49     | 98    |  |
|                       |      | Mean | 16.33             | 17.31  | 16.82 |  |
|                       |      | S.D. | 3.87              | 3.93   | 3.91  |  |

Also Type B behaviour poor mental health persons have higher regression (mean 18.50) than type B behaviour good mental health persons (mean 16.73). Results reveal that Good mental health Type B behaviour persons have higher regression (mean 16.73) than Good mental health Type A behaviour persons (mean 15.25). It is revealing that Poor mental health Type B behaviour persons also have higher regression (mean 18.50) than poor mental health type A behaviour person (mean 17.76).

To find out the effect of types of mental health (Good and poor) and types of behaviour (type A and type B) of normal persons and heart patients on regression as life stress factor, 2x2 factorial design is apply on data and the analysis of variance is calculated. The results are reflected in table no. 6.04.2

Table no. 6.04.2

| Source of Variance                                  | Sum of Square | d.f. | Mean Squares | F ratio                                    |
|---|---------------|------|--------------|--|
| A. Type of Mental Health<br>(Good and Poor)<br>SS a | 104.23        | 1    | 104.23       | 7.26 < .01                                 |
| B. Type of Behaviour<br>(Type A and Type B)<br>SS b | 27.86         | 1    | 27.86        | 1.94 > .05                                 |
| Interaction (AXB)<br>SS ab                          | 3.10          | 1    | 3.10         | 0.22 > .05                                 |
| SS Within Cell                                      | 1349.60       | 94   | 14.36        | d.f. .05 level 1.98<br>d.f. .01 level 2.63 |

The result of table no. 6.04.2 shows that Types of mental health (Good and poor) have significant effect on regression (F ratio found 7.26 at .01 level). But types of behaviour (Type A and Type B) have not significant effect on regression (F ratio found 1.94 at .05 level). Also Interaction within groups has no significant effect on regression (F ratio found 0.22 at .05 level). Thus the hypothesis stating 6 (d), that "There is no significant effect of type of behaviour (A & B), mental health (good and poor) on Regression of normal persons and heart patients" is rejected.

**6.05 To see, the effect of type of behaviour (A & B) and types of mental health (good and poor) on Fatigue as life stress factor of normal persons and heart patients.**

Table no. 6.05.1 shows the mean and SD values of types of mental health (Good and Poor) and types of behaviour (Type A and Type B) on Fatigue of normal persons and heart patients.

Table no. 6.05.1

| Sub Groups            |      |      | Type of Behaviour |        | Total |  |
|-----------------------|------|------|-------------------|--------|-------|--|
|                       |      |      | Type A            | Type B |       |  |
| Type of Mental Health | Good | N    | 28                | 33     | 61    |  |
|                       |      | Mean | 14.89             | 13.64  | 14.21 |  |
|                       |      | S.D. | 4.72              | 3.65   | 4.19  |  |
|                       | Poor | N    | 21                | 16     | 37    |  |
|                       |      | Mean | 16.10             | 17.56  | 16.73 |  |
|                       |      | S.D. | 6.36              | 5.44   | 5.94  |  |
|                       |      | N    | 49                | 49     | 98    |  |
|                       |      | Mean | 15.41             | 14.92  | 15.16 |  |
|                       |      | S.D. | 5.45              | 4.65   | 5.05  |  |

The results of table no. 6.05.1 reveal that poor mental health persons have higher fatigue (mean 16.73) than good mental health persons (mean 14.21). Result shows that Type A behaviour persons have higher fatigue (mean 15.41) than type B behaviour persons (mean 14.92). Table result shows that Type A behaviour Poor mental persons have higher fatigue (mean 16.10) than Type A behaviour good mental health persons (mean 14.89). Also type B behaviour poor mental heath persons have higher fatigue (mean 17.56) than type B behaviour good mental persons (mean 13.64). Type A behaviour Good mental health persons have higher fatigue (mean 14.89) than Type B behaviour Good mental health person (mean 13.64). But type B behaviour poor mental health persons have higher fatigue (mean 17.56) than type A behaviour poor mental health person (mean 16.10).

To find out the effect of types of mental health (Good and poor) and types of behaviour (type A and type B) of normal persons and heart patients on fatigue as life stress factor, 2x2 factorial design is apply on data and the analysis of variance is calculated. The results are reflected in table no. 6.05.2

Table no. 6.05.2

| Source of Variance                                  | Sum of Square | d.f. | Mean Squares | F ratio                                    |
|---|---------------|------|--------------|--|
| A. Type of Mental Health<br>(Good and Poor)<br>SS a | 149.33        | 1    | 149.33       | 6.16 < .01                                 |
| B. Type of Behaviour<br>(Type A and Type B)<br>SS b | 0.25          | 1    | 0.25         | 0.01 > .05                                 |
| Interaction (AXB)<br>SS ab                          | 42.12         | 1    | 42.12        | 1.74 > .05                                 |
| SS Within Cell                                      | 2280.06       | 94   | 24.26        | d.f. .05 level 1.98<br>d.f. .01 level 2.63 |

The result of table no. 6.05.2 shows that Types of mental health (Good and poor) has significant effect on fatigue (F ratio found 6.16 at .01 level). But types of behaviour (Type A and Type B) have not significant effect on fatigue (F ratio found 0.01 at .05 level). Also Interaction within groups has no significant effect on fatigue (F ratio found 1.74 at .05 level). Thus the hypothesis stating 6 (e), that "There is no significant effect of type of behaviour (A & B), mental health (good and poor) on Fatigue of normal and persons heart patients" is rejected.

6.06 To see, the effect of types of behaviour (A & B), Types of mental health (good and poor) on Guilt as life stress factor of normal persons and heart patients.

Table no. 6.06.1 shows the mean and SD values of types of mental health (Good and Poor) and types of behaviour (Type A and Type B) on guilt of normal persons and heart patients.

Table no. 6.06.1

| Sub Groups            |      |      | Type of Behaviour |        | Total |  |
|-----------------------|------|------|-------------------|--------|-------|--|
|                       |      |      | Type A            | Type B |       |  |
| Type of Mental Health | Good | N    | 28                | 33     | 61    |  |
|                       |      | Mean | 13.86             | 14.21  | 14.05 |  |
|                       |      | S.D. | 3.69              | 3.37   | 3.49  |  |
|                       | Poor | N    | 21                | 16     | 37    |  |
|                       |      | Mean | 15.95             | 17.19  | 16.49 |  |
|                       |      | S.D. | 2.29              | 2.66   | 2.50  |  |
|                       |      | N    | 49                | 49     | 98    |  |
|                       |      | Mean | 14.76             | 15.18  | 14.97 |  |
|                       |      | S.D. | 3.31              | 3.43   | 3.36  |  |

The result of table 6.06.1 shows that Type B behaviour persons have higher guilt (mean 15.18) than type A behaviour persons (mean 14.76). Results show that poor mental health persons have higher guilt (mean 16.49) than good mental health persons (mean 14.05). It is evident from table that Type A behaviour poor mental health persons have higher guilt (mean 15.95) than Type A behaviour good mental health persons (mean 13.86). Also type B behaviour poor mental health persons have higher guilt (mean 17.19) than type B behaviour good mental health person (mean 14.21). Result shows

that good mental health type B behaviour persons have higher guilt (mean 14.21) than good mental health type A behaviour persons (mean 13.86). Also poor mental health type B behaviour persons have high guilt (mean 17.19) than poor mental health type A behaviour persons (mean 15.95).

To find out the effect of types of mental health (Good and poor) and types of behaviour (type A and type B) of normal persons and heart patients on guilt as life stress factor, 2x2 factorial design is apply on data and the analysis of variance is calculated. The results are reflected in table no. 6.06.2.

Table No. 6.06.2

| Source of Variance                                  | Sum of Square | d.f. | Mean Squares | F ratio                                    |
|---|---------------|------|--------------|--|
| A. Type of Mental Health<br>(Good and Poor)<br>SS a | 145.97        | 1    | 145.97       | 14.56 < .01                                |
| B. Type of Behaviour<br>(Type A and Type B)<br>SS b | 14.35         | 1    | 14.35        | 1.43 > .05                                 |
| Interaction (AXB)<br>SS ab                          | 4.40          | 1    | 4.40         | 0.44 > .05                                 |
| SS Within Cell                                      | 942.33        | 94   | 10.02        | d.f. .05 level 1.98<br>d.f. .01 level 2.63 |

The result of table no. 6.06.2 shows that Types of mental health (good and poor) have significant effect on guilt (F ratio found 14.56 at .01 level). But there is no significant effect found on fatigue of types of behaviour (A & B) (F ratio found 1.43 at .05 level). Also interaction within group has no significant effect on guilt (F ratio found 0.44 at .05 level). Thus the hypothesis stating 6(f), "There is no significant effect

of type of behaviour (A & B), mental health (good and poor) on Guilt of normal persons and heart patients" is rejected.

**6.07 To see, the effect of types of behaviour (A & B) and types of mental health (good and poor) on Extraversion as life stress factor of normal persons and heart patients.**

Table no. 6.07.1 shows the mean and SD values of types of mental health (Good and Poor) and types of behaviour (Type A and Type B) on extraversion of normal persons and heart patients.

Results reveal that Good mental health persons have higher extraversion (mean 18.30) than poor mental health persons (mean 16.95). Type B behaviour persons have higher extraversion (mean 18.31) than type A behaviour persons (mean 17.27). Good mental health Type B behaviour persons have higher extraversion (mean 18.76) than good mental health types A behaviour persons (mean 17.75). Also poor mental health type B behaviour persons have higher extraversion (mean 17.38) than poor mental health type A behaviour persons (mean 16.62). Type A good mental health persons have higher extraversion quality (mean 17.75) than type A behaviour poor mental health persons (mean 16.62). Also type B behaviour good mental health persons have higher extraversion (mean 18.76) than type B behaviour poor mental health persons (mean 17.38).

Table no. 6.07.1

| Sub Groups            |      |      | Type of Behaviour |        | Total |  |
|-----------------------|------|------|-------------------|--------|-------|--|
|                       |      |      | Type A            | Type B |       |  |
| Type of Mental Health | Good | N    | 28                | 33     | 61    |  |
|                       |      | Mean | 17.75             | 18.76  | 18.30 |  |
|                       |      | S.D. | 2.82              | 2.17   | 2.52  |  |
|                       | Poor | N    | 21                | 16     | 37    |  |
|                       |      | Mean | 16.62             | 17.38  | 16.95 |  |
|                       |      | S.D. | 3.14              | 1.78   | 2.63  |  |
|                       |      | N    | 49                | 49     | 98    |  |
|                       |      | Mean | 17.27             | 18.31  | 17.79 |  |
|                       |      | S.D. | 2.98              | 2.13   | 2.63  |  |

To find out the effect of types of mental health (Good and poor) and types of behaviour (type A and type B) of normal persons and heart patients on extraversion as life stress factor, 2x2 factorial design is apply on data and the analysis of variance is calculated. The results are reflected in table no. 6.07.2.

Table No. 6.07.2

| Source of Variance                                  | Sum of Square | d.f. | Mean Squares | F ratio                                    |
|---|---------------|------|--------------|--|
| A. Type of Mental Health<br>(Good and Poor)<br>SS a | 35.87         | 1    | 35.87        | 5.53 < .01                                 |
| B. Type of Behaviour<br>(Type A and Type B)<br>SS b | 17.66         | 1    | 17.66        | 2.72 < .01                                 |
| Interaction (AXB)<br>SS ab                          | 0.36          | 1    | 0.36         | 0.06 > .05                                 |
| SS Within Cell                                      | 610.01        | 94   | 6.49         | d.f. .05 level 1.98<br>d.f. .01 level 2.63 |

The result of table 6.07.2 shows that types of mental health (Good and Poor) have significant effect on extraversion (F ratio found 5.53 at .01 level). Also types of behaviour (Type A and Type B) have significant effect on extraversion (F ratio found 2.72 at .01 level) But there is no significant effect found on extraversion in interaction of subgroups (F ratio found 0.06 at .01 level) thus the hypothesis stating 6 (g), "There is no significant effect of type of behaviour (A & B), mental health (good and poor) on Extraversion of normal persons and heart patients" is rejected.

**6.08 To see, the effect of types of behaviour (A & B) and types of mental health (good and poor) on Arousal as life stress factor of normal persons and heart patients.**

Table no. 6.07.1 shows the mean and SD values of types of mental health (Good and Poor) and types of behaviour (Type A and Type B) on arousal of normal persons and heart patients.

The result of table 6.08.1 shows that Type B behaviour persons have higher arousal value (mean 18.00) than type B behaviour persons (mean 17.92). Table indicates that poor mental health persons have higher arousal value (mean 18.35) than good mental health persons (mean 17.72). Good mental health type B behaviour persons have higher arousal value (mean 18.06) than good mental health type A behaviour persons (mean 17.32). Poor mental health type A behaviour persons have higher arousal value (mean 18.71) than poor mental health type B behaviour persons (mean 17.88). Type A behaviour poor mental health persons have higher arousal value (mean 18.71) than type A behaviour good mental health

persons (mean 17.32). Also type B behaviour good mental persons have higher arousal value (mean 18.06) than type B behaviour poor mental health person (mean 17.88).

Table no. 6.08.1

| Sub Groups            |      |      | Type of Behaviour |        | Total |  |
|-----------------------|------|------|-------------------|--------|-------|--|
|                       |      |      | Type A            | Type B |       |  |
| Type of Mental Health | Good | N    | 28                | 33     | 61    |  |
|                       |      | Mean | 17.32             | 18.06  | 17.72 |  |
|                       |      | S.D. | 2.75              | 2.74   | 2.75  |  |
|                       | Poor | N    | 21                | 16     | 37    |  |
|                       |      | Mean | 18.71             | 17.88  | 18.35 |  |
|                       |      | S.D. | 2.26              | 3.18   | 2.69  |  |
|                       |      | N    | 49                | 49     | 98    |  |
|                       |      | Mean | 17.92             | 18.00  | 17.96 |  |
|                       |      | S.D. | 2.62              | 2.86   | 2.73  |  |

To find out the effect of types of mental health (Good and poor) and types of behaviour (type A and type B) of normal persons and heart patients on arousal as life stress factor, 2x2 factorial design is apply on data and the analysis of variance is calculated. The results are reflected in table no. 6.08.2.

The result of table 6.08.2 shows that there is no significant effect on arousal of types of behaviour (A & B) (F ratio found 1.11 at .05 level). Types of mental health (Good and Poor) also have no significant effect on arousal (F ratio found 0.01 at .05 level). Results indicate that Interaction of both groups also have no significant effect on arousal (F ratio found 1.90 at .05 level). Thus the hypothesis stating 6(h), that "There is no significant effect of type of behaviour (A

& B), mental health (good and poor) on Arousal of normal persons and heart patients," is confirmed.

Table No. 6.08.2

| Source of Variance                                  | Sum of Square | d.f. | Mean Squares | F ratio                                    |
|---|---------------|------|--------------|--|
| A. Type of Mental Health<br>(Good and Poor)<br>SS a | 8.27          | 1    | 8.27         | 1.11 > .05                                 |
| B. Type of Behaviour<br>(Type A and Type B)<br>SS b | 0.06          | 1    | 0.06         | 0.01 > .05                                 |
| Interaction (AXB)<br>SS ab                          | 14.15         | 1    | 14.15        | 1.90 > .05                                 |
| SS Within Cell                                      | 698.02        | 94   | 7.43         | d.f. .05 level 1.98<br>d.f. .01 level 2.63 |

## **Conclusion –**

1. Type A & Type B behaviour pattern persons have significant difference on Extraversion.
2. Type A behaviour persons have high Anxiety and Extraversion quality, but Type B behaviour persons has high Stress, Depression, Regression, Fatigue, Guilt and Arousal.
3. Poor Mental Health persons have high Anxiety, Stress, Depression, Regression, Fatigue, Guilt & Arousal and Type A behaviour pattern persons has High Extraversion quality.
4. Types of mental health (Good and Poor) have significant difference on Anxiety, Stress, Depression, Regression, Fatigue, Guilt and Extraversion.
5. Heart Patients have high Anxiety, Stress, Depression, Fatigue, Guilt and Arousal and Normal Persons have high extraversion quality.
6. Types of persons (Normal Persons and Heart Patients) have significant difference on Anxiety, Stress, Depression, regression and Fatigue.
7. Types of behaviour (Type A and Type B), Types of person (Normal persons and Heart patients), and the interactions of both groups significantly effect life stress.
8. Types of behaviour (Type A and Type B) have significant effect on Fatigue and Extraversion, and Types of Persons (Normal person and Heart patients) have significant effect on Depression, Regression and Fatigue. Interaction of both groups has significant effect on Stress and Fatigue.
9. Types of Mental health (Good and Poor) have significant effect on Anxiety, Stress, Depression, Regression, Fatigue, Guilt and Extraversion. Types of persons (Normal persons and Heart Extraversion. Types of persons (Normal persons and Heart

patients) have significant effect on Anxiety, Stress, Depression, Regression, Fatigue, Extraversion and Arousal. Both groups have significant effect on Anxiety, Depression, Fatigue and Guilt

10. Types of Mental Health (Good and Poor) of normal persons and heart patients have significant effect on Anxiety, Stress, Depression, Regression, Guilt and Extraversion. Types of Behaviours (Type A & Type B) of Normal persons and heart patients have significant effect on Extraversion quality.
11. Interactions of both groups, Types of behaviour and Types of mental health of normal persons and heart patients have significant effect on Anxiety.

### **Limitations of present study –**

The present study has been limitations in the following ways –

1. The present study is confined to the Jalaun Distt. Of Uttar Pradesh. Hence the result obtained and the inferences drawn are relevant to the subjects of distt. Jalaun area.
2. The present study is confined to the subjects of 45 – 65 years of age range of Normal person and Heart patients.

### **Suggestions for further study –**

There is always great scope for further work in any field of research. There are innumerable problem in the field of present study. In order to understand these problems clearly and precisely it is essential to conduct many research studies in this field. One piece

of research work cannot explain all the problems in the field of CHD. Hence more and more research studies should be undertaken to examine these problems. Further it is also not possible for a single research worker to cover all the dimensions of particular problem or to extend the field of investigation to cover all the different type of population.

The present study is confined to study of life stress, mental health and Behaviour pattern of Normal person and Heart patients. An attempt has been made to analyse the relationship of these variable with life adjustment. The results of the present study are open to further research and verification.

The present study was confined to the subjects of Distt. Jalaun, (U.P.). Hence, conclusions drawn from the present study are applicable to the subjects of this particular area. Further researchers may be taken up on the wider population of different region of the state in order to make broader generalizations about subjects.

To understand the life stress, mental health and behaviour of Normal person and heart patients, it is essential to study them in respect of other variables as home environment, life style, aspiration level, socio-economic status and other personal characteristics.

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# Chapter - V

## *Summary*

## Summary

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Most of the psychologists are of the view that mental health is a socio-psychological concern. The government has recently recognized the vital role of social sciences in human life, and therefore it has launched many schemes to encourage the execution of the work or research in this field pertaining to the analysis of various dimension of human life. We know that there are so many factors such as social, psychological and economic factors, which are responsible for health services, particularly in primary health care. We observe that most of the patients overlook the symptoms of breath trouble, irregular heart beats, and heartache or other discomforts in the chest and because of these symptoms they suffer from cardiac problems.

Most of the scholars and researchers have pointed out the incident of the heart disease in type-A behaviour and it is generally observed that type-A individuals are more susceptible towards the greater risk of heart disease. There is a question why type-A behaviour persons be linked to "Coronary Heart Problems" and The answer that we get is that type-A individuals tend to become more accessible to arousal physiologically and psychologically when they are in tense or stressful situation. This arousal results in certain biochemical reaction, which are linked with heart disease.

### **Objective of the present study –**

1. To study the significant difference between Type A and Type B behaviour persons on life stress factors.

2. To study the significant difference between Good Mental Health Persons and Poor Mental Health Persons on life stress factors.
3. To study the significant difference between Normal Persons and Heart Patients on life stress factors.
4. To study the effect of the types of behaviour (A & B) and types of persons (Normal persons and Heart patients) on different life stress factors.
5. To study the effect of the types of mental health (Good and Poor), and types of persons (Normal persons and Heart patients) on different life stress factors.
6. To study the effect of the types of behaviour (A & B) and types of mental health (good and poor) on different life stress factors of normal persons and heart patients.

#### **(D) Hypothesis of the present study –**

1. Persons having Type A and Type B behaviour do not differ on life stress factors.
2. Persons having Good Mental Health and Poor Mental Health do not differ on life stress factors.
3. Normal persons and Heart patients do not differ on life stress factors.

4. There is no significant effect of types of behaviour (A & B) and types of person (Normal persons and Heart patients) on different life stress factors.
5. There is no significant effect of types of mental health (Good and Poor), and types of person (Normal persons and Heart patients) on different life stress factors.
6. There is no significant effect of types of behaviour (A & B) and types of mental health (good and poor) on different life stress factors of normal persons and heart patients.

### **Importance of the present study –**

Paradoxically, not all research evidence consistently shows a strong clear link between Type A behaviour and coronary heart disease. Some research suggests that men who fit the Type A pattern may be more likely to survive a second heart attack than men fitting the Type B pattern-even though the Type A men more likely to have an initial heart attack. In light of such puzzling evidence, a small minority of researchers goes to far to claim that the relationship between Type A and Type B behaviour and coronary heart disease is illusory (Fishman, 1987).

However, most researchers argue that at least a modest relationship exist between the two factors, although certain components of Type A behaviour seem to be more closely associated with coronary heart disease than others. The hard driving, hostile and competitive aspects of Type A personality are

major factors in coronary heart disease; Impatience in completing tasks seems less important.

More important, even if a causal link between Type A behaviour and coronary heart disease exists, people may be able to learn to change from their A behaviour to B behaviour and as a consequence, decrease their risk of heart disease.

The research also useful to find out the relation between stresses mental health as the causes for CHD (Coronary heart diseases). Most recent research shows that stress and mental health of old age person also play a vital role in their diseases. But the stress and mental health is often dependent on their natural and social environment so CHD cannot be a causes of these types factor. But by this research we can see this truth that these factors are support or not in CHD disease in old age person.

## **Methods and Procedure**

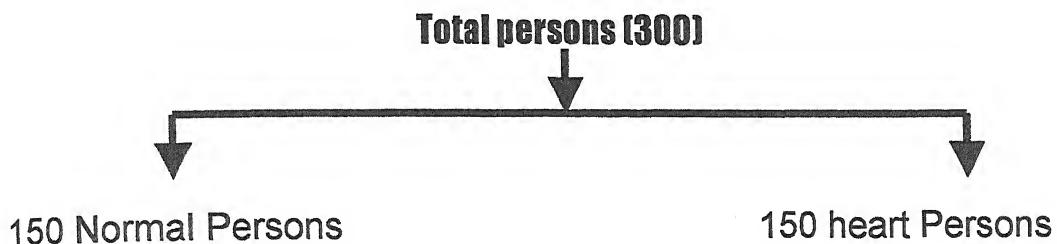
### **Population –**

The present study was conducted on Normal persons and Heart Patients of Distt. Jalaun (U.P). Distt. Jalaun is divided in five tehsil named - Orai, Konch, Kalpi, Jalaun and Madhogarh so the population is collected from these areas.

### **The Sample –**

In the present study we take 300 subjects in the age range of 45 to 65 years through purposive sampling technique. These subjects classified under Normal persons and Heart patients. Thus each group have 150 subjects i.e. 150 subjects are Normal Persons 150 are heart patients.

### Classification of Sample



### **Research Design and Variable –**

The aim of present study is to understand the effect of type A and Type B behaviour pattern and mental health on life stress of normal and heart patients. The present study is exploratory nature in which the independent variables have already occurred and researcher starts with the observation of dependent variables. The independent variables studied in respect of their possible relation and effect on dependent variables. Consequently an ex-post facto research design was considered for present study.

#### **1. Independent Variable –**

- Type of behaviour (A & B)
- Mental Health (Good & Poor)
- Type of persons (General and Heart Patients)

#### **2. Dependent variable –**

- Life Stress

### **The Tools used –**

The following tools were selected and tested.

#### **1- Mental Health Scale**

By: Dr. Taresh Bhatia & Dr. S. C. Sharma

## **2- A B B P (A B Behaviour Pattern Scale)**

By: Upinder Dhar, Manisha Jain

## **3- 8 state Questionnaire**

By: Sh. Malay Kapoor and Dr. Mahesh Bhargava

### **The Collection of Data –**

In the present study, we took 300 samples in which 150 were normal persons and 150 were heart patients. The sample was collected from distt. Jalaun (U.P.). Distt. Jalaun divided in five tehsil, Orai, Jalaun, Kalpi, Madhogarh, Konch and Heart patient was collected from each of tehsil. Same Selection process used for normal person collection.

For heart patient's users data, I went to cardiologist specialist, Physician and Govt. & Private hospital and take the help of their doctor's. Some other sources like homeopathic clinic, Vaidhya also help us for collection the data.

For the Normal person we take that person who has not any type of heart disease like Blood pressure, Diabetes and coronary heart disease etc.

### **The statistical technique used –**

The purpose of the present study was to compare the Type A and Type B behaviour and mental health of Normal person and heart patients. Mean and standard deviation of each group were calculated. The comparisons between different groups were made on the basis of the critical ratio with .05 and .01 levels of confidence considered significant. Applying critical ratio tested hypothesis from

no.1 to 3. Rest all hypothesis were tested through two-way analysis of variance.

## **The Data Analysis and Discussion**

**Part A** – Overall comparison of Type A and Type B behaviour persons on life stress factors.

**Part B** – Overall Comparison of Good and Poor Mental Health persons on life stress factors.

**Part C** – Overall Comparison of Normal persons and Heart patients on life stress factors.

**Part D** – The effect of types of behaviour (Type A and Type B) and Types of person (Normal persons and Heart patients) on different life stress factors.

**Part E** – The effect of types of mental health (Good and Poor) and Types of person (Normal persons and Heart patients) on different life stress factors

**Part F** – The effect of types of behaviour (Type A and Type B) and Types of mental health (Good and Poor) on different life stress factors of normal persons and heart patients.

## **Conclusion -**

1. Types of behaviour (Type A & Type B) have significant difference on Extraversion as life stress factor.
2. Types of Mental Health (Good and poor) have significant difference on Anxiety, Stress, Depression, Regression, fatigue, Guilt and Extraversion as life stress factors.
3. Type of persons (Normal persons and Heart Patients) has significant difference on Anxiety, Stress, Depression, Regression and Fatigue as life stress factors.
4. Type of persons (Normal Persons and Heart patients) and Types of behaviour (Type A and Type B) have significant effect on life stress. Type of person (Normal persons and Heart patients) has significant effect on Depression, Regression and Fatigue as life stress factors. Types of behaviour (Type A and Type B) have significant effect on Fatigue and Extraversion. Interaction of both variables has significant effect on stress and fatigue.
5. Types of mental health (Good and Poor) and Type of persons (Normal persons and heart patients) interaction have significant effect on Anxiety, Depression, Fatigue and Guilt as life stress factors. Individually Types of Mental health (Good and Poor) have significant effect on Anxiety, Stress, Depression, Regression, Fatigue, Guilt and Extraversion as life stress factors. Type of persons (Normal persons and Heart patients) has significant effect on Anxiety, Stress, Depression, Fatigue, Extraversion and Arousal as life stress factors.
6. Types of Mental health (Good and Poor) and Types of Behaviour (Type A and Type B) interaction have significant

effect on Anxiety. Individually Types of Mental Health (Good and Poor) have significant effect on Anxiety, Stress, Depression, Regression, Guilt and Extraversion and Types of behaviour (Type A and Type B) have significant effect on Extraversion as life stress factor.

### **Limitations of present study –**

The present study has been limitations in the following ways –

1. The present study is confined to the Jalaun Distt. Of Uttar Pradesh. Hence the result obtained and the inferences drawn are relevant to the subjects of distt. Jalaun area.
2. The present study is confined to the subjects of 45 – 65 years of age range of Normal person and Heart patients.

### **Suggestions for further study –**

There is always great scope for further work in any field of research. There are innumerable problem in the field of present study. In order to understand these problems clearly and precisely it is essential to conduct many research studies in this field. One piece of research work cannot explains all the problems in the filed of CHD. Hence more and more research studies should be undertaken to examine these problems. Further it is also not possible for a single research worker to cover all the dimensions of

particular problem or to extend the field of investigation to cover all the different type of population.

The present study is confined to study of life stress, mental health and Behaviour pattern of Normal person and Heart patients. An attempt has been made to analyse the relationship of these variable with life adjustment. The results of the present study are open to further research and verification.

The present study was confined to the subjects of Distt. Jalaun, (U.P.). Hence, conclusions drawn from the present study are applicable to the subjects of this particular area. Further researchers may be taken up on the wider population of different region of the state in order to make broader generalizations about subjects.

To understand the life stress, mental health and behaviour of Normal person and heart patients, it is essential to study them in respect of other variables as home environment, life style, aspiration level, socio-economic status and other personal characteristics.

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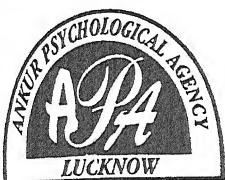
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ବୁଦ୍ଧିବିଜ୍ଞାନ

# *Appendix*



Consumable Booklet

of

**ABBPS**

(Hindi Version)

Upinder Dhar (Indore)  
Manisha Jain (Indore)

कृपया निम्न सूचनाएँ भरिए—

नाम (ऐच्छिक) .....  
आयु ..... लिंग .....  
व्यवसाय ..... अनुभव (वर्षों में) .....  
संस्थान .....  
वेतन ..... कार्यावधि .....

### निर्देश

यह मापनी दो भागों में विभक्त है, पहले भाग में 17 तथा दूसरे भाग में 16 कथन हैं जो हमारे नित्य प्रति दिन के विभिन्न व्यावहारिक अनुभवों से सम्बन्धित हैं। आप प्रत्येक कथन को सावधानी से पढ़ें तथा उसके सामने बने पाँच खानों—“पूर्णतया सहमत, सहमत, अनिश्चित, असहमत तथा पूर्णतया असहमत” में से किसी एक खाने (□) में कथन के प्रति आप किस मात्रा में विचार करते हैं उसे सही का चिह्न (✓) अंकित कर अपनी प्रतिक्रिया व्यक्त करें। सही कथन आपके विचारों तथा अभिव्यक्तियों से सम्बन्धित है इसलिये कोई भी सही अथवा गलत नहीं है। इसीलिये अपनी प्रतिक्रिया ईमानदारी से व्यक्त करें तथा आपके उत्तर गोपनीय रखे जावेंगे।

### फलांकन तालिका

| Factors —<br>Part ↓ | I | II | III | IV | V | VI | Total |
|---------------------|---|----|-----|----|---|----|-------|
| I                   |   |    |     |    |   |    |       |
| II                  |   |    |     |    |   |    |       |
| Interpretation      |   |    |     |    |   |    |       |

Estd. 1983

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**ANKUR PSYCHOLOGICAL AGENCY**

22 / 481, IINDIRA NAGAR, LUCKNOW - 226 016 (INDIA)

## PART - I

| क्रम संख्या | कथन   | पूर्णतया सहमत            | सहमत                     | अनिश्चित                 | असहमत                    | पूर्णतया असहमत           |
|-------------|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 1. V        | जब मैं कुछ नहीं कर रहा होता तो आसपास चलना फिरना पसन्द करता हूँ।             | <input type="checkbox"/> |
| 2. II       | मैं जो काम कर रहा होता हूँ उसे शीघ्रतिशीघ्र समाप्त करना पसन्द करता हूँ।     | <input type="checkbox"/> |
| 3. IV       | मैं पूर्व निर्धारित मुलाकात में कभी भी देरी से नहीं पहुँचता हूँ।            | <input type="checkbox"/> |
| 4. III      | अधिकांश कार्य जिस गति से होते हैं उससे मुझे व्याकुलता होती है।              | <input type="checkbox"/> |
| 5. VI       | कार्य के अलावा मेरी बहुत ही कम रुचियाँ हैं।                                 | <input type="checkbox"/> |
| 6. II       | यदि मेरे पास कोई काम न हो तो मुझे बैचेनी होती है।                           | <input type="checkbox"/> |
| 7. III      | मैं हमेशा जल्दबाजी में रहता हूँ।  | <input type="checkbox"/> |
| 8. I        | मुझे जल्दी-जल्दी खाना खाने की आदत है।                                       | <input type="checkbox"/> |
| 9. IV       | स्पर्धा मेरी पहली पसन्द है।   | <input type="checkbox"/> |
| 10. I       | मैं एक साथ एक से अधिक काम करने में आनन्द का अनुभव करता हूँ।                 | <input type="checkbox"/> |
| 11. V       | मेरे लिये मात्रात्मक उपलब्धि सफलता की सूचक है।                              | <input type="checkbox"/> |
| 12. VI      | मैं बिना अपराध बोध के विश्राम नहीं कर सकता हूँ।                             | <input type="checkbox"/> |
| 13. I       | मैं हमेशा कम से कम समय में अधिक से अधिक पाने के लिये संघर्ष करता रहता हूँ।  | <input type="checkbox"/> |
| 14. V       | जब भी मैं खेलता हूँ अपनी श्रेष्ठता सिद्ध करना मेरी प्राथमिकता रहती है।      | <input type="checkbox"/> |
| 15. I       | मैं हमेशा समय सीमा निर्धारित करके कार्य करता हूँ।                           | <input type="checkbox"/> |
| 16. IV      | अवसर मिलने पर अपनी उपलब्धियों की चर्चा करना मैं अपना विशेषाधिकार समझता हूँ। | <input type="checkbox"/> |
| 17. III     | मुझे किसी भी कार्य को करने के लिये पर्याप्त समय नहीं मिल पाता है।           | <input type="checkbox"/> |

**PART - II**

| क्रम<br>खाली | कथन   | पूर्णतया<br>सहमत         | सहमत                     | अनिश्चित                 | असहमत                    | पूर्णतया<br>असहमत        |
|--------------|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 1.           | IV मैं समय के दबाव में काम नहीं करता हूँ।   | <input type="checkbox"/> |
| 2.           | III मैं अपनी उपलब्धियों की चर्चा तब तक नहीं करता हूँ जब तक परिस्थितियाँ ऐसी माँग ना करें। | <input type="checkbox"/> |
| 3.           | IV मैंने कभी भी किसी कार्य की समाप्ति के लिये समय सीमा निर्धारित नहीं की है।              | <input type="checkbox"/> |
| 4.           | II मैं मौज मस्ती और आराम के लिये खेलता हूँ।   | <input type="checkbox"/> |
| 5.           | I मैं जब चाहता हूँ तब विश्राम कर लेता हूँ।  | <input type="checkbox"/> |
| 6.           | V सफलता के अन्य मापदण्डों की तुलना में मैं मात्रा को अधिक महत्व नहीं देता हूँ।            | <input type="checkbox"/> |
| 7.           | II मैं एक समय में एक ही कार्य करना पसन्द करता हूँ।  | <input type="checkbox"/> |
| 8.           | IV मैं खाना खाते समय कोई जल्दबाजी ना करते हुये खाने का पूरा आनन्द लेता हूँ।               | <input type="checkbox"/> |
| 9.           | V मैं कभी भी जल्दबाजी में काम नहीं करता हूँ।  | <input type="checkbox"/> |
| 10.          | III काम करने के बाद खाली समय अच्छा लगता है।   | <input type="checkbox"/> |
| 11.          | V मैं अपनी भावनाओं को आसानी से व्यक्त कर देता हूँ।  | <input type="checkbox"/> |
| 12.          | II कार्य के अतिरिक्त मेरी बहुत सी रुचियाँ हैं।  | <input type="checkbox"/> |
| 13.          | III जिस गति से कार्य होते हैं मुझे उससे कोई परेशानी नहीं है।                              | <input type="checkbox"/> |
| 14.          | I पूर्व निर्धारित मुलाकतों को मैं साधारणतया लेता हूँ।                                     | <input type="checkbox"/> |
| 15.          | I मैं किसी भी कार्य को धीरे-धीरे करना पसन्द करता हूँ।                                     | <input type="checkbox"/> |
| 16.          | I जब मैं कुछ नहीं कर रहा होता हूँ तब एक जगह बैठना पसन्द करता हूँ।                         | <input type="checkbox"/> |

## अष्ट परिस्थितियों प्रश्नावली

8 S Q FORM A -1990

गारीब अनुबूति - श्री भग्न कपूर (नई दिल्ली) एवं श्री भग्न भास्त्र (आस्सा)

इस पुस्तिका में अधिकांश व्यक्तियों द्वारा किसी एक अथवा अन्य समय पर व्यक्त होने वाली मानसिक दशा एवं भावनाओं से सम्बन्धित कथन दिये गये हैं। इनमें कहीं 'सही' अथवा 'गलत' उत्तर जैसी कोई बात नहीं है। यौंकि हर व्यक्ति के विचार एक दूसरे से भिन्न होते हैं, इसलिए आपको इन कथनों के उत्तर केवल इस आधार पर देने हैं कि प्रश्न पाने के बाद कथन या प्रश्न के संबंध में आप उस क्षण कैसा महसूस कर रहे हैं। आपके प्रश्नों के उत्तर आपकी भावनाओं के सामान्य रूप से महसूस होने वाले विचारों पर आधारित न होकर, कथन या प्रश्न की तत्क्षण होने वाली प्रतिक्रिया के आधार पर होने चाहिए।

कृपया अपने उत्तर-पत्र पर ही लिखें। प्रत्येक प्रश्न में चार विकल्प यथा - a, b, c एवं d दिये गये हैं। उनमें से एक विकल्प को चुनिए जो कि आपकी उस क्षण महसूस भावना को सबसे अच्छा प्रतिविविष्ट करता है। तत्पश्चात चुने हुए इस उत्तर को आप विकल्प के सामने सही चिन्ह (✓) द्वारा निर्दिष्ट कीजिए। प्रत्येक प्रश्न के लिए केवल एक ही विकल्प पर सही का चिन्ह अकिञ्चित करें। इस बात की भली भाँति जाँच कर लीजिए कि प्रश्न पुस्तिका पर दिए गए कथन क्रमांक वही हों जो उत्तर-पत्र में आपके द्वारा लगाए गए सही चिन्ह वाले विकल्प के अंकार का उत्तर क्रमांक है।

## उत्तराधिकार

(1) मैं प्रसन्नचित महसूस करता हूँ।

- a. अत्यधिक
- b. ग्राम्यसत्य
- c. ग्राम्यअसत्य
- d. अधिकतर असत्य

इनमें से किसी एक उत्तर का चुनाव निश्चित ही आपको करना है। यदि इस समय आप सचमुच में ही प्रसन्नचित महसूस कर रहे हैं तो आप a का चुनाव करेंगे तथा उसी पर सही का चिन्ह (✓) अकिञ्चित करेंगे। यदि आप इस क्षण अत्यधिक अप्रसन्न महसूस कर रहे हैं तो आप d विकल्प पर सही का चिन्ह (✓) लगाइये। विकल्प b एवं c के द्वारा चिन्हित उत्तर तो सामान्य प्रसन्नता अथवा अप्रसन्नता की ही व्यक्त करेगा। परन्तु b अथवा c उत्तरों का उपयोग तब तक न कीजिए जब तक आप यह महसूस भलीभांति न कर सकें कि तत्क्षण भाव के आधार पर a अथवा d विकल्प को चुनने में आप असमर्थ हैं।

निम्न बातों को ध्यान में रखिए :

1. अपने उत्तर की सोचने में अत्यधिक असमय न लगाएं, इस क्षण आप उस कथन के संबंध में कैसा महसूस दरते हैं, उसके प्रथमतः महसूस होने वाले स्वाभाविक उत्तर को ही लिखें।
2. जाँच कर लें कि उत्तर पूर्ण है या नहीं गए उत्तर क्रमांक वही हैं जो प्रश्न-पुस्तिका में कथन क्रमांक हैं।
3. प्रत्येक उत्तर पर प्रत्युत्तर दीजिए। चाहे आपकी दृष्टि में उत्तर कथन का उत्तर आप पर प्रयुक्त नहीं होता हो। आपका उत्तर पूर्णतः गोपनीय रहा जाएगा।
4. जो भी आपकी भावनाओं एवं विचारों में है, वही सत्य एवं इमानदारी से प्रत्युत्तर रूप में लिखिए। कृपया किसी ऐसे उत्तर पर चिन्ह न लगाएं जो सही बात कहने सा प्रतीत हो रहा है।
5. इस क्षण में जो आपकी मनस्थिति है उसी के अनुसार ही उत्तर लिखिए।

1. इस क्षण मुझे न कोई समस्या है न चिन्ता ।  
 a. अत्यधिक सत्य  
 b. प्रायः सत्य  
 c. प्रायः असत्य  
 d. अत्यधिक असत्य

2. इस समय मुझ पर.....है।  
 a. बहुत ज्यादा दबाव  
 b. कुछ दबाव  
 c. शायद ही कोई दबाव  
 d. किसी तरह का कोई दबाव नहीं

3. मैं इस समय सचमुच ही काफी आवेग में हूँ।  
 a. अत्यधिक सत्य  
 b. प्रायः सत्य  
 c. प्रायः असत्य  
 d. अत्यधिक असत्य

4. जिस प्रकार मैं अभी महसूस कर रहा हूँ, मेरे लिए कोई भी कठिन समस्या .....?  
 a. अत्यधिक चुनौतिपूर्ण है  
 b. प्रायः चुनौतिपूर्ण है  
 c. शरारत पूर्ण है  
 d. समाधान करने मेरे कठिन है

5. इस क्षण मैं अत्यधिक आलर्थ का अनुभव कर रहा हूँ -  
 a. अत्यधिक सत्य  
 b. प्रायः सत्य  
 c. प्रायः असत्य  
 d. अत्यधिक असत्य

6. मैं इतना सांखेगिक रूप से धक चुका हूँ और इतनी अधिक चिन्ता करता हूँ कि मेरे हाथ कौप रहे हैं -  
 a. अत्यधिक सत्य  
 b. प्रायः सत्य  
 c. प्रायः असत्य  
 d. अत्यधिक असत्य

7. आज जब मैंने लोगों से चात की, तब मैंने सोचा कि क्या सचमुच मैं वे लोग ऐसी बातों में शाख रखते हैं कि मैं क्या कह रहा हूँ -  
 a. अत्यधिक सत्य  
 b. प्रायः सत्य  
 c. प्रायः असत्य  
 d. अत्यधिक असत्य

8. आज मेरे मस्तिष्क मेरे उच्च विचार निरंतर आ रहे हैं।  
 a. अत्यधिक सत्य  
 b. प्रायः सत्य  
 c. प्रायः असत्य  
 d. अत्यधिक असत्य

9. मैं तनाव एवं बेचैनी महसूस करता हूँ।  
 a. अत्यधिक सत्य  
 b. प्रायः सत्य  
 c. प्रायः असत्य  
 d. अत्यधिक असत्य

10. आज मैं उतना अच्छा कर रहा हूँ, जितना मैं सचमुच मैं कर सकता हूँ।  
 a. अत्यधिक सत्य  
 b. प्रायः सत्य  
 c. प्रायः असत्य  
 d. अत्यधिक असत्य

11. जित हूँ मैं वे बड़ी महसूस कर रहा हूँ, उससे ऐसा लगता है कि मैं उन लोगों की द्या पर अत्यधिक आश्रित नहीं हूँ जिन्हे मैं जानता हूँ।  
 a. अत्यधिक सत्य  
 b. प्रायः सत्य  
 c. प्रायः असत्य  
 d. अत्यधिक असत्य

12. मेरी बत्तमान मनस्थिति के अनुसार मैं स्वयं को सक्रीय पाता हूँ।  
 a. बहुत सावधानीपूर्वक एवं जानबुझकर  
 b. कहाँ भधिक सचेत एवं सावधानीपूर्वक  
 c. कहाँ अधिक आवेगालगक  
 d. दिना रोचे-समझे अत्यधिक सावेगपूर्वक

13. मैं यहसूत करता हूँ -  
 a. अत्यधिक जागृत  
 b. प्रायः जागृत  
 c. कुछ-कुछ सुन्त  
 d. अत्यधिक सुन्त

14. इस क्षण मुझे कोई ऐसा जीव सा दर्द और कष्ट नहीं है जिसका मैं व्यनि न कर सकूँ -  
 a. अत्यधिक सत्य  
 b. प्रायः सत्य  
 c. प्रायः असत्य  
 d. अत्यधिक असत्य

15. इस क्षण मैं नहसूस करता हूँ -  
 a. अत्यधिक आत्मीय  
 b. प्रायः जाते करने वाला  
 c. प्रायः शान्त  
 d. अत्यधिक शान्त

16. मैं महसूस करता हूँ कि मुझे सोने की आवश्यकता है किन्तु बिस्तर पर जाते समय मैं इतना अधिक संविधिस रहता हूँ कि सोने का प्रयत्न करने पर भी नहीं सो पाता हूँ।  
 a. अत्यधिक सत्य  
 b. प्रायः सत्य  
 c. प्रायः असत्य  
 d. अत्यधिक असत्य

17. यदि अभी कोई दुर्घटना हो जाए तो मैं भी तो अत्यधिक उत्सुकित होऊंगा न विचिलित।

- अत्यधिक सत्य
- प्रायः सत्य
- प्रायः असत्य
- अत्यधिक असत्य

18. अभी परिस्थितियौ सुझे मरमतापूर्वक रहने की अनुभवी नहीं देखी।

- अत्यधिक सत्य
- प्रायः सत्य
- प्रायः असत्य
- अत्यधिक असत्य

19. इस क्षण मैं इतना आशावादी नहीं हूँ जितना कि मैं सामन्यता रहता हूँ।

- अत्यधिक सत्य
- प्रायः सत्य
- प्रायः असत्य
- अत्यधिक असत्य

20. यदि मुझे इसी क्षण सामूहिक कार्य में भाग लेना पड़े तो सहजता करूँगा।

- अत्यधिक सहयोग एवं जोश के साथ
- कहीं अधिक सहयोग के साथ
- शायद कहीं अधिक असहयोग के साथ
- अत्यधिक असहयोग के साथ

21. मैं आज बहुत एक गया हूँ।

- अत्यधिक सत्य
- प्रायः सत्य
- प्रायः असत्य
- अत्यधिक असत्य

22. जिस रूप मेरे मैं अभी महसूस करता हूँ उससे यहीं आशर्थ होता है कि मेरे जीवन मेरे वास्तव में, मैं किसी व्यक्ति के काम जाया

- अत्यधिक असत्य
- प्रायः सत्य
- प्रायः असत्य
- अत्यधिक असत्य

23. यदि इस क्षण मेरी भौंड में रहता तो महसूस करता -

- अत्यधिक आराम
- अधिक आरामदायक
- अधिक कष्ट
- अत्यधिक कष्ट

24. मैं अब तेज़ एवं शोर भारवे बाले संगीत की अपेक्षाकृत हूँ, निम्रासमय जंगीत सुनना चाहूँगा।

- अत्यधिक सत्य
- प्रायः असत्य
- प्रायः असत्य
- अत्यधिक असत्य

25. इस क्षण मेरे अपने, हृदय आप जैसी शारीरिक वेगीनी नहीं करता।

- अत्यधिक सत्य
- प्रायः सत्य
- प्रायः असत्य
- अत्यधिक असत्य

26. मेरी विनाशी का वर्णन ..... से हो सकता

- अत्यधिक चबल एवं शक्तिहीन
- अधिकतर चबल एवं कुछ-कुछ शक्तिहीन
- अधिकरां आरामदाह
- पुरालः आरामदाह

27. मैं अभी अपने मित्रों के साथ किसी प्रकार के खेल या आनन्द लेने की मनः स्थिति मेरी है।

- अत्यधिक सत्य
- प्रायःसत्य
- प्रायःअसत्य
- अत्यधिक असत्य

28. आज मेरे मत्स्यिक मेरे विचारों में व्यवधान उत्पन्न करती है यसपि चाहता है कि मेरे विचारों में व्यवधान उत्पन्न हो।

- अत्यधिक सत्य
- प्रायःसत्य
- प्रायःअसत्य
- अत्यधिक असत्य

29. मैं पूर्णतः एवं शक्ति महसूस करता हूँ।

- अत्यधिक सत्य
- प्रायःसत्य
- प्रायःअसत्य
- अत्यधिक असत्य

30. इस क्षण मैं स्वयं मेरी किन्हीं बातों से दोषी होने की भवना महसूस करता हूँ।

- अत्यधिक सत्य
- प्रायःसत्य
- प्रायःअसत्य
- अत्यधिक असत्य

31. इस क्षण मैं किसी भी शोर-भारवे बाले समूह में रहना पसन्न करता हूँ।

- अत्यधिक सत्य
- प्रायःसत्य
- प्रायःअसत्य
- अत्यधिक असत्य

32. आज मूँह पूर्ण आशूरा एवं सरके रहने के लिए परिष्क्रम करता पड़ेगा।

- अत्यधिक सत्य
- प्रायःसत्य
- प्रायःअसत्य
- अत्यधिक असत्य

49. वर्तमान भन: स्थिति में ऐसा भगवत् है कि यदि गेरे अर्द्ध भगवत् हुए तो मुझे संगमग्र औंसू दों बाबाने पड़ेगी।

- अत्यधिक सत्य
- प्रायः सत्य
- प्रायः असत्य
- अत्यधिक असत्य

50. ऐसा प्रतीत होता है कि मैं उत्तरोत्तर कुछ फरते की भावना से प्रेरित हूँ, एवं हजारों ऐसे काम हैं जिन्हें मुझे करना चाहिए।

- अत्यधिक सत्य
- प्रायः सत्य
- प्रायः असत्य
- अत्यधिक असत्य

51. इस क्षण मैं इतना प्रसन्न नहीं हूँ जितना मैं अपने आरों तरफ बालों को महसूस कर रहा हूँ।

- अत्यधिक सत्य
- प्रायः सत्य
- प्रायः असत्य
- अत्यधिक असत्य

52. वर्तमान भन: स्थिति में जिसी भी कार्य को आसानी से कर सकने का सकल्प कर रखता हूँ।

- अत्यधिक सत्य
- प्रायः सत्य
- प्रायः असत्य
- अत्यधिक असत्य

53. इस क्षण मुझे ऐसा लग रहा है कि -

- कहीं लेट जाऊँ तथा आत्मन कर्त्ता
- किसी भी बात का सरल रूप मे लूँ
- कुछ कहूँ लैकिन अधिक सक्रियता के साथ नहीं
- सक्रियता एवं उत्तेजना से कहूँ

54. शायद मैं आज रात को जागकर यहीं सोचता रहूँ कि जो कार्य मैंने गलत किए हैं उनका परिणाम क्या होगा।

- अत्यधिक सत्य
- प्रायः सत्य
- प्रायः असत्य
- अत्यधिक असत्य

55. यदि आभी दूसरे व्यक्ति से मुझे खात लेनी पड़े तो -

- यह साच-विचार की घड़ी भर लिए कठिन होगा कि मैं क्या करूँ।
- सोच-विचार में कष्ट होगा कि मैं क्या करूँ।
- क्या बहुना है इसे सोचने मे जोई कष्ट नहीं होगा।
- सभय की स्थिति की तुलना मे यहीं अधिक बहुने की बात रहेगी।

56. इस क्षण मेरे मस्तिष्क मे विचार आसानी से आ जाते हैं।

- अत्यधिक सत्य
- प्रायः सत्य
- प्रायः असत्य
- अत्यधिक असत्य

57. मुझे देखनी रुह बात की है कि मैं कुछ चाहता हूँ परन्तु नहीं जानूँ जानूँ कि मैं क्या चाहता हूँ।

- अत्यधिक सत्य
- प्रायः सत्य
- प्रायः असत्य
- अत्यधिक असत्य

58. मेरा सामाजिक जीवन ..... है -

- विलक्षण नहीं (अस्तित्व रहित)
- कुछ भीना
- अधिक सक्रिय
- अत्यधिक सक्रिय एवं तीव्र

59. वर्तमान भन: स्थिति मे किसी उपयोगी कार्य को मस्तिष्क मे चौकसीक होती है।

- अत्यधिक सत्य
- प्रायः सत्य
- प्रायः असत्य
- अत्यधिक असत्य

60. आज जब मैं कुछ कहना चाहता हूँ तो अपने विचारों को चार्टिंग फलों मे फटिनाई भहसूस करता हूँ।

- अत्यधिक सत्य
- प्रायः सत्य
- प्रायः असत्य
- अत्यधिक असत्य

61. अभी कुछ लक्षणात्मक लघु अस्थान ..... करेगा।

- वार्षिक शक्ति प्रदान
- थोड़ा शक्ति प्रदान
- थोड़ा धकान प्रदान
- धक्कावट प्रदान

62. अभी मैं अपने वास्तविक अवधार से सन्तुष्ट हूँ।

- अत्यधिक सत्य
- प्रायः सत्य
- प्रायः असत्य
- अत्यधिक असत्य

63. यदि अभी सत्यात्मक रायबद्धम चल रहा है तो मुझे शायद पीछे दौड़कर लानी चाहे ऐसा क्या होगा।

- अत्यधिक सत्य
- प्रायः सत्य
- प्रायः असत्य
- अत्यधिक असत्य

64. आज सुधह भी अपेक्षा मेरा दिनांक इस समय अधिक सक्रिय है।

- अत्यधिक सत्य
- प्रायः सत्य
- प्रायः असत्य
- अत्यधिक असत्य

65. अभी मै बहुत ..... जब मै जाता

- अत्यधिक
- प्रायः सत्य
- प्रायः असत्य
- अत्यधिक

66. वर्तमान भन: जब मै जाता

- अत्यधिक
- प्रायः सत्य
- प्रायः असत्य
- अत्यधिक

67. अभी मै यह ..... मै करना चाहता

- अत्यधिक
- प्रायः सत्य
- प्रायः असत्य
- अत्यधिक

68. यदि मै अभी ..... चकराने सकता

- अत्यधिक
- प्रायः सत्य
- प्रायः असत्य
- अत्यधिक

69. इस क्षण कार्य ..... है।

- अत्यधिक
- प्रायः सत्य
- प्रायः असत्य
- अत्यधिक

70. इस ममय मे ..... मै जी हूँ।

- अन्यथा
- प्रायः नहीं
- प्रायः है
- अन्यथा

71. यदि मझे विज्ञान लाना चाहा जाता

- यह नहीं
- यह है
- अन्यथा
- अन्यथा

72. आज मेरे विचार

- अन्यथा
- प्रायः सत्य
- प्रायः असत्य
- अत्यधिक

65. अभी मैं बहुत आराम महसूस कर रहा हूँ।

- a. अत्यधिक सत्य
- b. प्रायः सत्य
- c. प्रायः असत्य
- d. अत्यधिक असत्य

66. बर्दिगान मन स्थिति में, मैं खेल का आनंद तभी से सकता हूँ जब मैं जीत जाऊँ।

- a. अत्यधिक सत्य
- b. प्रायः सत्य
- c. प्रायः असत्य
- d. अत्यधिक असत्य

67. अभी मैं यह महसूस करता हूँ कि जीवन का प्रत्येक कार्य जैसे मैं करना चाहूँगा वैरो ही होगा।

- a. अत्यधिक सत्य
- b. प्रायः सत्य
- c. प्रायः असत्य
- d. अत्यधिक असत्य

68. यदि मैं अभी पूर्ण शारीरिक कार्य करने का प्रयत्न करूँ तो मेरा शिर चकरने से गेंगा और बेहोशी महसूस होगी।

- a. अत्यधिक सत्य
- b. प्रायः सत्य
- c. प्रायः असत्य
- d. अत्यधिक असत्य

69. इस क्षण कार्य करने की इच्छा मेरे सामान्य स्तर के समतूल्य है।

- a. अत्यधिक सत्य
- b. प्रायः सत्य
- c. प्रायः असत्य
- d. अत्यधिक असत्य

70. इस समय मैं उन दुरी वालों को सोचकर कुछी ही रुक्त हूँ औ मैंने भी हूँ, और जैसे उनके चेहरा से देखा सा जा रहा हूँ।

- a. अत्यधिक सत्य
- b. प्रायः सत्य
- c. प्रायः असत्य
- d. अत्यधिक असत्य

71. यदि मुझे विशाल श्रोता समूह में मध्य में बोलने के लिए अभी बुला दिया जाए तो मैं -

- a. बहुत शिथिल हो जाऊँगा और आत्म-विश्वास खो दूँगा।
- b. थोड़ा शिथिल हो जाऊँगा।
- c. अधिक शान्त और आत्म-विश्वास के साथ बोलूँगा।
- d. अत्यधिक शान्त एवं आत्म-विश्वास के साथ रहूँगा।

72. आज मेरेविचार धौर-धौर आ रहे हैं।

- a. अत्यधिक सत्य
- b. प्रायः सत्य
- c. प्रायः असत्य
- d. अत्यधिक असत्य

73. मैं अप्पे एवं सुखद मूड़ में हूँ।

- a. अत्यधिक सत्य
- b. प्रायः भूत्य
- c. प्रायः असत्य
- d. अत्यधिक असत्य

74. आज मुझसे काफी अपेक्षाएँ की गई हैं।

- a. अत्यधिक सत्य
- b. प्रायः सत्य
- c. प्रायः असत्य
- d. अत्यधिक असत्य

75. आज युधे जो भी करता है मैं सोचता हूँ कि मैं इसे सही करेका करूँगा।

- a. अत्यधिक सत्य
- b. प्रायःसत्य
- c. प्रायःअसत्य
- d. अत्यधिक असत्य

76. मैं आहुता हूँ कि येरा जीवन इतना अधिक कठिन और भ्रमित हो दिया कि अभी है।

- a. अत्यधिक सत्य
- b. प्रायःसत्य
- c. प्रायःअसत्य
- d. अत्यधिक असत्य

77. मैं अहसूस करता हूँ जैसे कि मैं यकान से पीड़ित तथा शक्तिहीन हूँ।

- a. अत्यधिक सत्य
- b. प्रायःसत्य
- c. प्रायःअसत्य
- d. अत्यधिक असत्य

78. मैं अर्द्ध रो पूर्णतः सन्तुष्ट हूँ।

- a. अत्यधिक सत्य
- b. प्रायःसत्य
- c. प्रायःअसत्य
- d. अत्यधिक असत्य

79. हमेशा भी अपेक्षा आज मैं जानता हूँ कि अधिकतर लोग मुझे इसके से भूल्योक्ति करते हैं कि मैं .....

- a. अत्यधिक शान्त
- b. थोड़ा अधिक शान्त
- c. थोड़ा अधिक जीवन
- d. अत्यधिक जीवन

80. आज समझ बहुत धौर-धौर अव्यतीत होगा प्रतीत हो रहा है।

- a. अत्यधिक सत्य
- b. प्रायःसत्य
- c. प्रायःअसत्य
- d. अत्यधिक असत्य

81. मैं अपने को असहमत, अकर हुआ तथा चिकित्शा महसूस कर रहा हूँ।

- a. अत्यधिक सत्य
- b. प्रायः सत्य
- c. प्रायः असत्य
- d. अत्यधिक असत्य

82. अभी ऐसा प्रतीत होता है कि मैं ..... सर का कार्य कर रहा हूँ।

- a. उच्च
- b. औसत
- c. औसत से नीचे
- d. अत्यधिक निम्न

83. मैं इतना शारीरिक महसूस कर रहा हूँ कि मुझे आश्वर्य होता है कि मैं कैसे पूरा दिन बिताऊँगा।

- a. अत्यधिक सत्य
- b. प्रायः सत्य
- c. प्रायः असत्य
- d. अत्यधिक असत्य

84. मैं महसूस करता हूँ कि मैं किसी भी आकस्मिक परिस्थिति के लिए तैयार हूँ।

- a. अत्यधिक सत्य
- b. प्रायः सत्य
- c. प्रायः असत्य
- d. अत्यधिक असत्य

85. अभी मुझमें किसी अच्छे भूरस्थानस्थ पर जाने हेतु पर्यावरण शक्ति है।

- a. अत्यधिक सत्य
- b. प्रायः सत्य
- c. प्रायः असत्य
- d. अत्यधिक असत्य

86. मैं महसूस करता हूँ कि जब मैं आज रात रोने के लिए जाऊँगा तो मुझे कहीं परेशानी नहीं होगी।

- a. अत्यधिक सत्य
- b. प्रायः सत्य
- c. प्रायः असत्य
- d. अत्यधिक असत्य

87. अभी मैं अपने शारीरिक आनंदणि से पूर्णतः तुल्य हूँ।

- a. अत्यधिक सत्य
- b. प्रायः सत्य
- c. प्रायः असत्य
- d. अत्यधिक असत्य

88. इस समय मैं जैसा महसूस कर रहा हूँ उस आधार पर प्रायः रामी बस्तुओं में आनन्द प्राप्त कर सकता हूँ।

- a. अत्यधिक सत्य
- b. प्रायः सत्य
- c. प्रायः असत्य
- d. अत्यधिक असत्य

89. इस धर्म में युत अधिक चिन्तित हूँ।

- a. अत्यधिक सत्य
- b. प्रायः सत्य
- c. प्रायः असत्य
- d. अत्यधिक असत्य

90. आज मैं ..... महसूस करता हूँ।

- a. विलकुल क्रोध नहीं
- b. भावूली क्रोध
- c. कुछ-कुछ क्रोध
- d. अत्यधिक क्रोध

91. मैं धूरलधिक सुख में हूँ।

- a. अत्यधिक सत्य
- b. प्रायःसत्य
- c. प्रायःअसत्य
- d. अत्यधिक असत्य

92. अभी मेरे लिए किसी को बर्तमान स्वर्ज के बारे में ठीक से बतलाना कठिन होता।

- a. अत्यधिक सत्य
- b. प्रायःसत्य
- c. प्रायःअसत्य
- d. अत्यधिक असत्य

93. शारीरिक रूप से मैं ..... महसूस करता हूँ।

- a. पूर्णतः धक्का हुआ
- b. धक्का हुआ
- c. शक्तियुक्त
- d. पूर्णतः शक्तियुक्त

94. इस धर्म औं पूजा भी हुआ उस से मैं सन्तुष्ट हूँ।

- a. अत्यधिक सत्य
- b. प्रायःसत्य
- c. प्रायःअसत्य
- d. अत्यधिक असत्य

95. आज जप नै परते भरता हूँ तो दूसरों को भी अपने उत्ताह में सम्मिलित पर रखता हूँ।

- a. अत्यधिक सत्य
- b. प्रायःसत्य
- c. प्रायःअसत्य
- d. अत्यधिक असत्य

96. ऐसा प्रतीत हो रहा है कि बहुत कुछ एक ताथ हो रहा है।

- a. अत्यधिक सत्य
- b. प्रायःसत्य
- c. प्रायःअसत्य
- d. अत्यधिक असत्य

| SN. | MHS |    |    |    |     | ABBP  |    |    |     |    | Part I |    |       |    |    | Part II |    |    |       |    | 8 s stress |    |    |    |    |     |     |       |     |
|-----|-----|----|----|----|-----|-------|----|----|-----|----|--------|----|-------|----|----|---------|----|----|-------|----|------------|----|----|----|----|-----|-----|-------|-----|
|     | a   | b  | c  | d  | e   | total | i  | ii | iii | iv | v      | vi | total | i  | ii | iii     | iv | v  | total | 1  | 2          | 3  | 4  | 5  | 6  | 7   | 8   | total |     |
|     |     |    |    |    |     |       |    |    |     |    |        |    |       |    |    |         |    |    |       |    |            |    |    |    |    |     |     |       |     |
| 1   | 24  | 24 | 19 | 29 | 29  | 125   | 11 | 8  | 12  | 10 | 8      | 6  | 55    | 12 | 9  | 11      | 9  | 10 | 51    | 27 | 22         | 24 | 23 | 23 | 31 | 10  | 18  | 178   |     |
| 2   | 35  | 37 | 27 | 29 | 29  | 166   | 15 | 8  | 11  | 14 | 10     | 7  | 65    | 12 | 10 | 9       | 10 | 6  | 47    | 24 | 14         | 17 | 18 | 17 | 20 | 18  | 15  | 154   |     |
| 3   | 38  | 47 | 48 | 29 | 33  | 195   | 16 | 9  | 6   | 11 | 12     | 4  | 58    | 13 | 14 | 13      | 9  | 11 | 60    | 16 | 17         | 21 | 15 | 13 | 15 | 21  | 20  | 138   |     |
| 4   | 23  | 23 | 20 | 30 | 30  | 126   | 10 | 7  | 10  | 12 | 10     | 5  | 54    | 11 | 8  | 12      | 8  | 10 | 49    | 22 | 16         | 19 | 20 | 15 | 22 | 20  | 17  | 151   |     |
| 5   | 43  | 46 | 44 | 30 | 36  | 199   | 18 | 9  | 8   | 12 | 12     | 6  | 65    | 14 | 11 | 10      | 9  | 13 | 57    | 20 | 18         | 13 | 16 | 22 | 14 | 14  | 17  | 134   |     |
| 6   | 33  | 33 | 35 | 31 | 33  | 165   | 16 | 8  | 8   | 12 | 7      | 6  | 57    | 12 | 6  | 10      | 10 | 11 | 49    | 14 | 15         | 19 | 10 | 14 | 17 | 16  | 22  | 127   |     |
| 7   | 45  | 39 | 37 | 27 | 32  | 180   | 16 | 9  | 12  | 12 | 5      | 66 | 18    | 13 | 13 | 13      | 13 | 70 | 20    | 25 | 14         | 17 | 16 | 24 | 18 | 21  | 155 |       |     |
| 8   | 37  | 40 | 38 | 27 | 27  | 169   | 15 | 8  | 8   | 9  | 10     | 7  | 57    | 14 | 12 | 11      | 12 | 12 | 61    | 7  | 18         | 20 | 12 | 9  | 16 | 22  | 15  | 119   |     |
| 9   | 35  | 36 | 34 | 28 | 28  | 161   | 15 | 8  | 10  | 10 | 8      | 61 | 14    | 12 | 11 | 13      | 14 | 64 | 10    | 22 | 18         | 13 | 5  | 17 | 19 | 17  | 121 |       |     |
| 10  | 30  | 31 | 29 | 23 | 23  | 136   | 10 | 6  | 8   | 9  | 8      | 7  | 48    | 14 | 11 | 12      | 14 | 13 | 64    | 22 | 11         | 19 | 10 | 18 | 13 | 20  | 21  | 134   |     |
| 11  | 40  | 40 | 45 | 42 | 41  | 208   | 12 | 9  | 6   | 8  | 10     | 6  | 51    | 13 | 11 | 10      | 8  | 11 | 53    | 17 | 13         | 17 | 14 | 13 | 12 | 16  | 15  | 117   |     |
| 12  | 37  | 44 | 50 | 45 | 46  | 222   | 15 | 8  | 10  | 12 | 15     | 8  | 68    | 13 | 14 | 15      | 10 | 14 | 66    | 7  | 16         | 15 | 12 | 12 | 9  | 19  | 18  | 108   |     |
| 13  | 33  | 42 | 41 | 36 | 36  | 188   | 14 | 8  | 9   | 13 | 11     | 6  | 61    | 13 | 11 | 12      | 11 | 13 | 59    | 15 | 14         | 17 | 16 | 17 | 12 | 22  | 18  | 131   |     |
| 14  | 30  | 40 | 38 | 33 | 32  | 173   | 13 | 6  | 10  | 11 | 12     | 4  | 56    | 11 | 9  | 10      | 9  | 11 | 50    | 15 | 15         | 16 | 17 | 10 | 18 | 15  | 18  | 124   |     |
| 15  | 39  | 36 | 45 | 29 | 32  | 181   | 15 | 9  | 11  | 11 | 13     | 10 | 69    | 14 | 11 | 12      | 10 | 7  | 54    | 18 | 19         | 18 | 16 | 16 | 17 | 6   | 18  | 128   |     |
| 16  | 38  | 35 | 44 | 28 | 30  | 175   | 13 | 8  | 10  | 11 | 12     | 9  | 63    | 13 | 10 | 12      | 9  | 8  | 52    | 21 | 25         | 22 | 21 | 22 | 19 | 19  | 21  | 170   |     |
| 17  | 30  | 38 | 38 | 36 | 34  | 176   | 18 | 8  | 9   | 13 | 10     | 6  | 64    | 14 | 10 | 10      | 8  | 8  | 52    | 17 | 19         | 13 | 16 | 16 | 17 | 18  | 18  | 134   |     |
| 18  | 38  | 40 | 34 | 24 | 30  | 166   | 10 | 6  | 10  | 12 | 8      | 8  | 54    | 16 | 12 | 10      | 6  | 8  | 52    | 22 | 19         | 19 | 18 | 21 | 20 | 15  | 17  | 151   |     |
| 19  | 36  | 48 | 41 | 33 | 33  | 191   | 18 | 10 | 13  | 11 | 15     | 8  | 75    | 12 | 11 | 7       | 15 | 15 | 60    | 12 | 12         | 12 | 8  | 5  | 12 | 19  | 15  | 95    |     |
| 20  | 38  | 40 | 38 | 28 | 35  | 179   | 15 | 8  | 10  | 14 | 12     | 4  | 63    | 9  | 10 | 6       | 6  | 6  | 37    | 23 | 21         | 21 | 16 | 17 | 19 | 22  | 19  | 16    | 153 |
| 21  | 41  | 39 | 45 | 41 | 39  | 205   | 16 | 6  | 14  | 13 | 11     | 8  | 68    | 17 | 13 | 13      | 13 | 11 | 65    | 17 | 16         | 19 | 18 | 17 | 17 | 16  | 17  | 138   |     |
| 22  | 37  | 38 | 35 | 34 | 38  | 182   | 17 | 6  | 8   | 10 | 11     | 4  | 56    | 10 | 8  | 12      | 9  | 11 | 50    | 16 | 20         | 23 | 21 | 16 | 17 | 16  | 17  | 152   |     |
| 23  | 38  | 39 | 45 | 40 | 36  | 198   | 16 | 8  | 10  | 12 | 10     | 6  | 62    | 14 | 10 | 10      | 10 | 12 | 56    | 17 | 15         | 17 | 13 | 16 | 17 | 13  | 16  | 20    | 130 |
| 24  | 36  | 40 | 40 | 37 | 32  | 185   | 14 | 8  | 8   | 10 | 10     | 4  | 54    | 12 | 10 | 10      | 10 | 8  | 50    | 9  | 14         | 11 | 13 | 9  | 12 | 18  | 18  | 104   |     |
| 25  | 40  | 39 | 36 | 30 | 37  | 182   | 12 | 9  | 8   | 11 | 10     | 5  | 55    | 11 | 9  | 10      | 12 | 9  | 51    | 13 | 29         | 17 | 14 | 13 | 14 | 17  | 16  | 133   |     |
| 26  | 39  | 41 | 40 | 28 | 37  | 185   | 10 | 6  | 9   | 11 | 7      | 54 | 18    | 12 | 13 | 12      | 11 | 66 | 18    | 18 | 13         | 15 | 13 | 15 | 18 | 20  | 130 |       |     |
| 27  | 44  | 47 | 47 | 46 | 40  | 224   | 14 | 5  | 6   | 7  | 9      | 4  | 45    | 16 | 10 | 11      | 12 | 12 | 61    | 11 | 12         | 17 | 14 | 11 | 8  | 20  | 19  | 112   |     |
| 28  | 28  | 28 | 32 | 30 | 34  | 152   | 12 | 6  | 8   | 8  | 6      | 8  | 48    | 12 | 6  | 10      | 6  | 6  | 44    | 22 | 15         | 21 | 25 | 17 | 16 | 15  | 16  | 147   |     |
| 29  | 35  | 40 | 42 | 36 | 38  | 191   | 11 | 6  | 5   | 12 | 10     | 6  | 50    | 14 | 13 | 12      | 13 | 12 | 64    | 20 | 25         | 20 | 15 | 17 | 16 | 21  | 15  | 149   |     |
| 30  | 31  | 32 | 38 | 28 | 21  | 150   | 12 | 8  | 9   | 12 | 7      | 4  | 52    | 12 | 13 | 14      | 13 | 12 | 64    | 24 | 14         | 19 | 24 | 14 | 21 | 17  | 13  | 146   |     |
| 31  | 37  | 43 | 44 | 39 | 36  | 199   | 14 | 9  | 6   | 11 | 3      | 54 | 9     | 8  | 15 | 4       | 14 | 50 | 4     | 11 | 12         | 10 | 3  | 4  | 20 | 21  | 85  |       |     |
| 32  | 46  | 45 | 47 | 35 | 36  | 209   | 17 | 9  | 7   | 10 | 13     | 6  | 62    | 14 | 13 | 13      | 10 | 10 | 60    | 18 | 14         | 15 | 12 | 6  | 10 | 20  | 22  | 117   |     |
| 33  | 34  | 36 | 34 | 19 | 35  | 158   | 7  | 9  | 8   | 11 | 4      | 50 | 13    | 13 | 12 | 12      | 10 | 60 | 17    | 19 | 16         | 20 | 19 | 18 | 17 | 20  | 146 |       |     |
| 34  | 39  | 41 | 35 | 26 | 37  | 178   | 9  | 8  | 10  | 8  | 3      | 53 | 16    | 11 | 9  | 14      | 9  | 59 | 12    | 13 | 23         | 18 | 19 | 19 | 20 | 26  | 150 |       |     |
| 35  | 32  | 34 | 38 | 31 | 31  | 166   | 15 | 8  | 10  | 4  | 55     | 14 | 12    | 12 | 13 | 10      | 61 | 23 | 22    | 15 | 20         | 22 | 17 | 20 | 15 | 154 |     |       |     |
| 36  | 40  | 42 | 41 | 34 | 33  | 190   | 14 | 6  | 11  | 12 | 6      | 61 | 19    | 13 | 10 | 13      | 12 | 67 | 11    | 20 | 9          | 19 | 9  | 13 | 18 | 20  | 119 |       |     |
| 37  | 34  | 37 | 40 | 36 | 33  | 180   | 15 | 8  | 7   | 9  | 12     | 4  | 55    | 9  | 11 | 10      | 13 | 10 | 53    | 20 | 23         | 16 | 21 | 19 | 18 | 17  | 19  | 153   |     |
| 38  | 41  | 47 | 43 | 39 | 211 | 16    | 10 | 6  | 14  | 10 | 3      | 59 | 14    | 13 | 8  | 9       | 9  | 53 | 13    | 14 | 12         | 8  | 14 | 21 | 20 | 114 |     |       |     |
| 39  | 34  | 40 | 36 | 40 | 36  | 186   | 12 | 6  | 10  | 11 | 8      | 3  | 50    | 14 | 7  | 12      | 11 | 7  | 51    | 16 | 16         | 20 | 18 | 18 | 15 | 17  | 22  | 142   |     |
| 40  | 34  | 39 | 46 | 29 | 37  | 185   | 15 | 7  | 14  | 13 | 7      | 63 | 9     | 9  | 15 | 8       | 10 | 51 | 20    | 20 | 14         | 11 | 8  | 13 | 21 | 21  | 128 |       |     |

|    |    |    |    |    |     |     |     |     |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |    |     |     |     |
|----|----|----|----|----|-----|-----|-----|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|----|-----|-----|-----|
| 41 | 39 | 41 | 36 | 34 | 191 | 12  | 8   | 11  | 9  | 6  | 54 | 12 | 12 | 14 | 14 | 76 | 21 | 20 | 19 | 20 | 17 | 14 | 20 | 16 | 147 |    |     |     |     |
| 42 | 42 | 41 | 33 | 37 | 194 | 16  | 13  | 14  | 11 | 7  | 71 | 19 | 15 | 14 | 14 | 76 | 21 | 20 | 19 | 20 | 19 | 12 | 16 | 20 | 19  | 17 |     |     |     |
| 43 | 31 | 33 | 39 | 32 | 29  | 164 | 10  | 8   | 9  | 9  | 5  | 53 | 9  | 12 | 11 | 7  | 8  | 47 | 16 | 13 | 19 | 12 | 15 | 15 | 15  | 20 | 19  |     |     |
| 44 | 41 | 45 | 37 | 33 | 201 | 11  | 8   | 6   | 12 | 4  | 53 | 17 | 11 | 12 | 14 | 13 | 67 | 15 | 17 | 15 | 15 | 17 | 12 | 18 | 17  | 12 | 18  |     |     |
| 45 | 41 | 38 | 39 | 26 | 26  | 170 | 15  | 5   | 12 | 14 | 12 | 5  | 63 | 11 | 15 | 10 | 9  | 12 | 57 | 18 | 22 | 15 | 11 | 18 | 17  | 13 | 15  | 13  |     |
| 46 | 32 | 36 | 39 | 32 | 40  | 179 | 10  | 5   | 10 | 13 | 10 | 4  | 52 | 14 | 6  | 10 | 7  | 44 | 15 | 17 | 15 | 17 | 13 | 19 | 16  | 15 | 13  |     |     |
| 47 | 29 | 29 | 27 | 34 | 148 | 7   | 8   | 6   | 7  | 10 | 7  | 45 | 15 | 10 | 8  | 10 | 53 | 16 | 17 | 13 | 14 | 8  | 9  | 9  | 15  | 20 |     |     |     |
| 48 | 32 | 35 | 36 | 37 | 32  | 172 | 11  | 8   | 12 | 8  | 12 | 3  | 54 | 13 | 9  | 9  | 8  | 48 | 21 | 16 | 18 | 18 | 18 | 18 | 18  | 13 | 15  |     |     |
| 49 | 37 | 38 | 41 | 31 | 40  | 187 | 14  | 6   | 6  | 10 | 10 | 5  | 51 | 14 | 13 | 11 | 11 | 63 | 15 | 14 | 17 | 10 | 9  | 9  | 12  | 19 | 16  |     |     |
| 50 | 50 | 33 | 38 | 39 | 32  | 34  | 176 | 18  | 8  | 9  | 12 | 10 | 6  | 63 | 9  | 13 | 10 | 9  | 13 | 54 | 18 | 13 | 10 | 12 | 16  | 17 | 15  | 18  | 119 |
| 51 | 51 | 34 | 29 | 29 | 29  | 150 | 13  | 8   | 11 | 11 | 13 | 7  | 63 | 8  | 12 | 9  | 12 | 50 | 15 | 20 | 14 | 19 | 12 | 17 | 11  | 21 | 21  |     |     |
| 52 | 52 | 38 | 40 | 39 | 28  | 32  | 177 | 20  | 10 | 10 | 15 | 15 | 4  | 74 | 11 | 9  | 12 | 14 | 60 | 18 | 17 | 8  | 12 | 1  | 11  | 21 | 109 | 15  |     |
| 53 | 53 | 31 | 35 | 37 | 27  | 31  | 161 | 11  | 9  | 13 | 10 | 7  | 59 | 16 | 13 | 12 | 11 | 65 | 14 | 18 | 19 | 15 | 14 | 14 | 14  | 15 | 123 |     |     |
| 54 | 54 | 40 | 46 | 37 | 19  | 32  | 174 | 16  | 9  | 11 | 13 | 11 | 7  | 67 | 12 | 9  | 12 | 10 | 55 | 21 | 17 | 16 | 15 | 17 | 14  | 11 | 17  | 128 |     |
| 55 | 55 | 38 | 38 | 42 | 22  | 23  | 163 | 16  | 8  | 10 | 12 | 6  | 6  | 64 | 19 | 12 | 14 | 11 | 70 | 14 | 20 | 19 | 12 | 17 | 16  | 13 | 16  | 19  |     |
| 56 | 56 | 40 | 44 | 45 | 26  | 35  | 190 | 16  | 7  | 6  | 14 | 13 | 7  | 63 | 6  | 9  | 15 | 8  | 10 | 48 | 19 | 14 | 13 | 14 | 12  | 13 | 14  | 12  | 20  |
| 57 | 57 | 36 | 37 | 39 | 36  | 34  | 182 | 15  | 7  | 8  | 12 | 4  | 58 | 12 | 10 | 6  | 10 | 12 | 50 | 18 | 18 | 17 | 19 | 10 | 17  | 17 | 17  | 133 |     |
| 58 | 58 | 37 | 37 | 40 | 26  | 32  | 172 | 16  | 9  | 6  | 14 | 9  | 7  | 61 | 16 | 11 | 13 | 15 | 66 | 20 | 24 | 18 | 17 | 13 | 20  | 17 | 22  | 151 |     |
| 59 | 59 | 36 | 36 | 28 | 32  | 28  | 160 | 12  | 7  | 10 | 12 | 6  | 6  | 53 | 14 | 12 | 8  | 6  | 10 | 50 | 23 | 15 | 19 | 24 | 20  | 18 | 13  | 15  | 147 |
| 60 | 60 | 42 | 39 | 45 | 26  | 30  | 182 | 16  | 8  | 8  | 12 | 12 | 6  | 62 | 8  | 11 | 13 | 11 | 10 | 53 | 27 | 18 | 13 | 17 | 13  | 10 | 18  | 18  | 134 |
| 61 | 61 | 31 | 42 | 39 | 35  | 35  | 27  | 174 | 8  | 8  | 9  | 10 | 12 | 5  | 52 | 15 | 13 | 12 | 10 | 11 | 61 | 8  | 12 | 17 | 14  | 16 | 16  | 20  | 20  |
| 62 | 62 | 30 | 34 | 37 | 31  | 37  | 169 | 14  | 6  | 10 | 8  | 8  | 4  | 50 | 10 | 10 | 13 | 10 | 10 | 53 | 7  | 13 | 14 | 16 | 7   | 19 | 15  | 19  | 110 |
| 63 | 63 | 36 | 39 | 42 | 33  | 38  | 188 | 16  | 8  | 10 | 12 | 13 | 4  | 63 | 10 | 8  | 6  | 6  | 6  | 36 | 21 | 12 | 4  | 14 | 19  | 20 | 13  | 126 |     |
| 64 | 64 | 28 | 37 | 46 | 34  | 38  | 183 | 12  | 7  | 5  | 10 | 12 | 5  | 51 | 7  | 11 | 10 | 8  | 8  | 44 | 12 | 16 | 11 | 10 | 9   | 13 | 25  | 18  | 114 |
| 65 | 65 | 34 | 36 | 35 | 28  | 38  | 171 | 13  | 8  | 11 | 10 | 13 | 5  | 60 | 12 | 13 | 12 | 12 | 12 | 61 | 16 | 15 | 13 | 16 | 16  | 16 | 20  | 20  | 133 |
| 66 | 66 | 24 | 36 | 39 | 30  | 31  | 160 | 16  | 9  | 10 | 11 | 11 | 8  | 65 | 12 | 12 | 12 | 11 | 11 | 58 | 15 | 16 | 13 | 19 | 13  | 17 | 19  | 20  | 132 |
| 67 | 67 | 34 | 40 | 41 | 34  | 29  | 178 | 13  | 9  | 8  | 12 | 12 | 59 | 18 | 13 | 9  | 11 | 11 | 62 | 11 | 20 | 17 | 12 | 13 | 10  | 17 | 16  | 17  | 121 |
| 68 | 68 | 35 | 39 | 41 | 27  | 39  | 181 | 17  | 9  | 11 | 12 | 9  | 6  | 64 | 8  | 9  | 10 | 9  | 7  | 43 | 14 | 10 | 9  | 11 | 13  | 9  | 11  | 13  | 101 |
| 69 | 69 | 35 | 43 | 40 | 25  | 29  | 172 | 16  | 8  | 11 | 12 | 12 | 6  | 65 | 12 | 12 | 12 | 12 | 9  | 57 | 16 | 16 | 16 | 16 | 15  | 16 | 17  | 15  | 127 |
| 70 | 70 | 35 | 28 | 36 | 25  | 19  | 143 | 17  | 10 | 9  | 15 | 11 | 10 | 72 | 13 | 11 | 13 | 15 | 15 | 67 | 14 | 18 | 19 | 19 | 19  | 17 | 19  | 17  | 136 |
| 71 | 71 | 37 | 39 | 37 | 27  | 33  | 173 | 14  | 6  | 7  | 10 | 10 | 5  | 52 | 14 | 12 | 13 | 14 | 66 | 13 | 14 | 12 | 14 | 12 | 14  | 15 | 16  | 16  |     |
| 72 | 72 | 31 | 40 | 36 | 32  | 36  | 175 | 14  | 7  | 6  | 10 | 12 | 8  | 57 | 12 | 10 | 9  | 10 | 9  | 53 | 13 | 14 | 14 | 14 | 14  | 13 | 13  | 18  | 116 |
| 73 | 73 | 30 | 28 | 34 | 30  | 26  | 148 | 16  | 8  | 10 | 10 | 8  | 62 | 10 | 8  | 60 | 12 | 12 | 10 | 10 | 10 | 46 | 16 | 16 | 19  | 18 | 20  | 139 |     |
| 74 | 74 | 34 | 37 | 44 | 39  | 38  | 192 | 9   | 6  | 13 | 12 | 8  | 57 | 19 | 10 | 10 | 9  | 8  | 56 | 13 | 16 | 12 | 14 | 11 | 12  | 17 | 17  | 112 |     |
| 75 | 75 | 39 | 41 | 42 | 28  | 33  | 183 | 14  | 9  | 9  | 12 | 12 | 9  | 65 | 17 | 13 | 13 | 12 | 12 | 67 | 17 | 19 | 17 | 17 | 17  | 18 | 19  | 19  | 144 |
| 76 | 76 | 31 | 35 | 39 | 35  | 29  | 169 | 19  | 8  | 9  | 5  | 2  | 3  | 46 | 20 | 12 | 9  | 5  | 4  | 50 | 24 | 20 | 19 | 19 | 17  | 15 | 19  | 161 |     |
| 77 | 77 | 30 | 24 | 37 | 18  | 22  | 131 | 13  | 7  | 11 | 9  | 7  | 58 | 10 | 12 | 10 | 6  | 48 | 23 | 20 | 21 | 20 | 28 | 17 | 15  | 15 | 19  | 164 |     |
| 78 | 78 | 30 | 23 | 37 | 17  | 22  | 129 | 13  | 8  | 11 | 9  | 7  | 59 | 10 | 11 | 12 | 10 | 6  | 49 | 22 | 20 | 21 | 17 | 28 | 17  | 15 | 19  | 159 |     |
| 79 | 79 | 31 | 24 | 37 | 18  | 22  | 132 | 12  | 8  | 12 | 10 | 8  | 10 | 60 | 14 | 12 | 13 | 11 | 14 | 64 | 20 | 18 | 19 | 25 | 19  | 18 | 20  | 18  | 157 |
| 80 | 80 | 44 | 39 | 37 | 27  | 29  | 176 | 12  | 8  | 11 | 13 | 10 | 7  | 61 | 14 | 12 | 11 | 11 | 11 | 59 | 12 | 20 | 18 | 28 | 15  | 18 | 23  | 18  | 152 |
| 81 | 81 | 32 | 34 | 31 | 23  | 31  | 151 | 11  | 6  | 7  | 12 | 13 | 3  | 46 | 11 | 12 | 11 | 12 | 11 | 64 | 27 | 16 | 18 | 18 | 15  | 22 | 17  | 13  | 146 |
| 82 | 82 | 37 | 39 | 34 | 27  | 29  | 166 | 13  | 8  | 9  | 12 | 10 | 7  | 59 | 16 | 12 | 11 | 12 | 11 | 63 | 18 | 19 | 12 | 24 | 10  | 9  | 23  | 18  | 133 |
| 83 | 83 | 35 | 38 | 39 | 31  | 33  | 176 | 11  | 8  | 8  | 11 | 12 | 6  | 56 | 13 | 8  | 12 | 13 | 13 | 59 | 16 | 16 | 17 | 17 | 16  | 15 | 16  | 17  | 130 |
| 84 | 84 | 27 | 33 | 38 | 27  | 36  | 161 | 14  | 9  | 10 | 11 | 6  | 7  | 57 | 13 | 11 | 13 | 6  | 5  | 48 | 22 | 23 | 24 | 26 | 10  | 20 | 21  | 19  | 165 |
| 85 | 85 | 40 | 46 | 47 | 35  | 36  | 204 | 13  | 9  | 9  | 12 | 13 | 6  | 62 | 15 | 12 | 12 | 12 | 12 | 63 | 14 | 12 | 14 | 15 | 8   | 11 | 22  | 19  | 115 |
| 86 | 86 | 35 | 35 | 36 | 24  | 27  | 157 | 14  | 8  | 10 | 10 | 7  | 59 | 14 | 13 | 11 | 14 | 12 | 64 | 21 | 18 | 16 | 20 | 19 | 20  | 16 | 16  | 146 |     |

|     |    |    |    |    |     |     |     |    |    |    |    |    |    |    |    |    |    |     |     |
|-----|----|----|----|----|-----|-----|-----|----|----|----|----|----|----|----|----|----|----|-----|-----|
| 90  | 31 | 23 | 34 | 21 | 16  | 12  | 6   | 55 | 14 | 10 | 12 | 12 | 62 | 16 | 12 | 16 | 17 | 19  | 129 |
| 91  | 38 | 44 | 35 | 33 | 29  | 179 | 16  | 7  | 11 | 3  | 12 | 6  | 52 | 18 | 19 | 14 | 15 | 11  | 16  |
| 92  | 26 | 22 | 30 | 27 | 19  | 124 | 14  | 9  | 10 | 12 | 13 | 4  | 62 | 12 | 10 | 8  | 10 | 52  | 16  |
| 93  | 35 | 39 | 33 | 39 | 37  | 183 | 15  | 8  | 8  | 14 | 8  | 6  | 59 | 13 | 6  | 6  | 12 | 11  | 162 |
| 94  | 39 | 39 | 40 | 37 | 37  | 192 | 15  | 9  | 6  | 10 | 11 | 5  | 56 | 11 | 12 | 8  | 10 | 51  | 16  |
| 95  | 37 | 41 | 38 | 24 | 24  | 164 | 14  | 7  | 10 | 10 | 10 | 7  | 58 | 15 | 11 | 9  | 7  | 11  | 117 |
| 96  | 35 | 38 | 40 | 36 | 31  | 180 | 16  | 8  | 12 | 11 | 11 | 6  | 64 | 8  | 12 | 10 | 6  | 8   | 149 |
| 97  | 34 | 36 | 34 | 32 | 33  | 169 | 12  | 9  | 10 | 11 | 11 | 5  | 58 | 18 | 11 | 11 | 8  | 13  | 20  |
| 98  | 39 | 40 | 40 | 34 | 36  | 189 | 18  | 8  | 7  | 9  | 9  | 10 | 61 | 18 | 14 | 11 | 10 | 11  | 130 |
| 99  | 38 | 38 | 42 | 37 | 36  | 191 | 15  | 9  | 12 | 11 | 13 | 5  | 65 | 14 | 13 | 10 | 10 | 57  | 22  |
| 100 | 38 | 39 | 45 | 36 | 34  | 192 | 15  | 8  | 8  | 10 | 11 | 4  | 56 | 14 | 11 | 14 | 10 | 13  | 130 |
| 101 | 36 | 43 | 49 | 44 | 45  | 217 | 14  | 8  | 9  | 11 | 15 | 7  | 64 | 13 | 13 | 14 | 9  | 13  | 107 |
| 102 | 32 | 41 | 40 | 33 | 36  | 182 | 13  | 7  | 8  | 12 | 10 | 7  | 57 | 13 | 10 | 11 | 10 | 11  | 123 |
| 103 | 34 | 43 | 44 | 37 | 39  | 197 | 15  | 9  | 10 | 14 | 12 | 9  | 69 | 15 | 12 | 13 | 65 | 16  | 138 |
| 104 | 37 | 41 | 33 | 25 | 31  | 167 | 17  | 9  | 14 | 12 | 14 | 9  | 75 | 12 | 13 | 9  | 15 | 13  | 154 |
| 105 | 38 | 36 | 44 | 41 | 37  | 196 | 18  | 10 | 15 | 13 | 10 | 9  | 75 | 13 | 14 | 11 | 14 | 12  | 122 |
| 106 | 36 | 40 | 41 | 37 | 32  | 186 | 15  | 8  | 9  | 10 | 11 | 5  | 58 | 15 | 11 | 12 | 63 | 10  | 100 |
| 107 | 45 | 48 | 47 | 46 | 41  | 227 | 15  | 6  | 7  | 8  | 10 | 5  | 51 | 17 | 11 | 12 | 13 | 18  | 141 |
| 108 | 29 | 30 | 33 | 31 | 35  | 158 | 13  | 7  | 9  | 10 | 7  | 9  | 55 | 13 | 7  | 11 | 12 | 14  | 91  |
| 109 | 34 | 39 | 41 | 35 | 37  | 186 | 10  | 6  | 6  | 11 | 12 | 7  | 52 | 10 | 12 | 10 | 11 | 9   | 100 |
| 110 | 33 | 35 | 33 | 18 | 34  | 153 | 7   | 8  | 7  | 10 | 11 | 4  | 47 | 12 | 9  | 11 | 12 | 8   | 107 |
| 111 | 38 | 40 | 34 | 25 | 36  | 173 | 8   | 7  | 8  | 9  | 10 | 7  | 49 | 15 | 10 | 10 | 13 | 13  | 20  |
| 112 | 40 | 41 | 46 | 42 | 38  | 207 | 15  | 9  | 6  | 13 | 9  | 4  | 56 | 13 | 12 | 7  | 8  | 9   | 154 |
| 113 | 33 | 39 | 35 | 39 | 34  | 180 | 11  | 6  | 9  | 10 | 8  | 4  | 48 | 13 | 9  | 11 | 10 | 8   | 150 |
| 114 | 38 | 40 | 41 | 32 | 36  | 187 | 15  | 9  | 12 | 13 | 10 | 6  | 65 | 18 | 14 | 13 | 14 | 12  | 142 |
| 115 | 40 | 44 | 43 | 36 | 32  | 195 | 10  | 8  | 7  | 11 | 12 | 6  | 54 | 16 | 11 | 12 | 13 | 11  | 144 |
| 116 | 34 | 27 | 35 | 24 | 18  | 138 | 16  | 9  | 10 | 14 | 10 | 9  | 68 | 12 | 11 | 12 | 13 | 12  | 107 |
| 117 | 36 | 38 | 35 | 32 | 32  | 168 | 13  | 6  | 7  | 9  | 10 | 6  | 51 | 13 | 11 | 12 | 12 | 11  | 138 |
| 118 | 39 | 40 | 41 | 35 | 36  | 191 | 18  | 9  | 8  | 9  | 10 | 8  | 62 | 17 | 15 | 12 | 11 | 11  | 139 |
| 119 | 38 | 39 | 45 | 36 | 34  | 192 | 15  | 8  | 8  | 10 | 11 | 4  | 56 | 14 | 11 | 14 | 10 | 13  | 126 |
| 120 | 43 | 43 | 40 | 26 | 37  | 189 | 10  | 7  | 10 | 13 | 12 | 8  | 60 | 16 | 11 | 13 | 12 | 14  | 136 |
| 121 | 38 | 34 | 37 | 23 | 166 | 15  | 7   | 10 | 9  | 9  | 4  | 54 | 11 | 12 | 13 | 10 | 7  | 114 |     |
| 122 | 38 | 36 | 42 | 36 | 25  | 177 | 15  | 4  | 10 | 10 | 13 | 5  | 57 | 9  | 13 | 10 | 10 | 52  | 20  |
| 123 | 37 | 44 | 42 | 39 | 34  | 196 | 11  | 5  | 9  | 10 | 12 | 5  | 52 | 16 | 11 | 10 | 12 | 61  | 138 |
| 124 | 38 | 38 | 39 | 29 | 28  | 172 | 14  | 8  | 11 | 12 | 6  | 63 | 15 | 10 | 12 | 7  | 13 | 116 |     |
| 125 | 39 | 41 | 45 | 35 | 27  | 187 | 12  | 7  | 10 | 11 | 7  | 58 | 14 | 11 | 10 | 14 | 11 | 121 |     |
| 126 | 45 | 42 | 43 | 36 | 29  | 195 | 11  | 9  | 8  | 14 | 15 | 8  | 65 | 9  | 12 | 10 | 12 | 17  | 137 |
| 127 | 36 | 42 | 33 | 26 | 28  | 165 | 10  | 9  | 9  | 13 | 14 | 9  | 64 | 11 | 13 | 11 | 9  | 6   | 106 |
| 128 | 46 | 45 | 42 | 34 | 34  | 201 | 12  | 10 | 15 | 3  | 11 | 7  | 58 | 12 | 11 | 15 | 10 | 10  | 106 |
| 129 | 36 | 36 | 22 | 30 | 27  | 19  | 134 | 13 | 8  | 9  | 14 | 13 | 8  | 65 | 12 | 13 | 11 | 17  | 116 |
| 130 | 46 | 45 | 42 | 34 | 34  | 201 | 12  | 10 | 15 | 3  | 11 | 2  | 53 | 12 | 11 | 15 | 12 | 12  | 120 |
| 131 | 36 | 37 | 44 | 36 | 39  | 192 | 11  | 9  | 4  | 11 | 3  | 49 | 14 | 12 | 11 | 13 | 62 | 10  |     |
| 132 | 41 | 43 | 39 | 21 | 34  | 178 | 18  | 10 | 15 | 10 | 12 | 6  | 71 | 9  | 11 | 10 | 4  | 9   | 138 |



| SN. | Total |    |    |    |    |     |    |    |    |    | Total |    |    |    |    |    |    |    |    |    |    |    |
|-----|-------|----|----|----|----|-----|----|----|----|----|-------|----|----|----|----|----|----|----|----|----|----|----|
|     | a     | b  | c  | d  | e  | f   | g  | h  | i  | j  | k     | l  | m  | n  | o  | p  | q  | r  | s  | t  | u  | v  |
| 1   | 48    | 41 | 42 | 25 | 34 | 190 | 14 | 9  | 8  | 12 | 12    | 9  | 64 | 17 | 13 | 12 | 12 | 17 | 15 | 17 | 16 | 18 |
| 2   | 41    | 37 | 43 | 25 | 33 | 179 | 15 | 8  | 8  | 12 | 12    | 6  | 61 | 17 | 12 | 12 | 13 | 66 | 18 | 16 | 19 | 18 |
| 3   | 35    | 29 | 30 | 32 | 30 | 156 | 8  | 4  | 7  | 8  | 6     | 4  | 37 | 8  | 11 | 9  | 9  | 10 | 1  | 22 | 21 | 24 |
| 4   | 38    | 38 | 38 | 20 | 39 | 173 | 15 | 7  | 8  | 14 | 14    | 8  | 66 | 18 | 11 | 13 | 14 | 12 | 63 | 17 | 22 | 23 |
| 5   | 41    | 39 | 38 | 23 | 32 | 173 | 19 | 9  | 7  | 12 | 13    | 9  | 69 | 17 | 15 | 11 | 14 | 14 | 1  | 17 | 20 | 21 |
| 6   | 32    | 43 | 42 | 16 | 35 | 168 | 14 | 7  | 6  | 9  | 8     | 6  | 50 | 16 | 10 | 8  | 11 | 10 | 3  | 19 | 15 | 11 |
| 7   | 36    | 43 | 39 | 36 | 39 | 193 | 13 | 6  | 8  | 10 | 13    | 3  | 53 | 12 | 12 | 10 | 12 | 12 | 38 | 10 | 11 | 18 |
| 8   | 33    | 35 | 36 | 22 | 32 | 158 | 15 | 8  | 9  | 9  | 10    | 9  | 60 | 14 | 7  | 12 | 15 | 14 | 62 | 21 | 18 | 20 |
| 9   | 40    | 34 | 39 | 25 | 34 | 172 | 15 | 8  | 8  | 12 | 12    | 6  | 61 | 17 | 12 | 12 | 13 | 66 | 19 | 20 | 21 | 19 |
| 10  | 32    | 35 | 37 | 24 | 35 | 163 | 15 | 7  | 10 | 11 | 11    | 7  | 61 | 13 | 12 | 10 | 11 | 6  | 52 | 13 | 17 | 11 |
| 11  | 38    | 23 | 40 | 27 | 27 | 155 | 12 | 9  | 10 | 8  | 8     | 6  | 53 | 14 | 12 | 8  | 10 | 10 | 57 | 23 | 24 | 28 |
| 12  | 31    | 23 | 37 | 18 | 22 | 131 | 12 | 8  | 6  | 11 | 9     | 7  | 53 | 10 | 11 | 12 | 10 | 6  | 79 | 24 | 20 | 21 |
| 13  | 28    | 18 | 22 | 32 | 20 | 120 | 13 | 6  | 8  | 8  | 7     | 5  | 47 | 11 | 15 | 14 | 11 | 11 | 62 | 22 | 16 | 20 |
| 14  | 35    | 26 | 45 | 24 | 37 | 167 | 14 | 8  | 12 | 11 | 12    | 7  | 64 | 14 | 10 | 10 | 12 | 12 | 53 | 17 | 16 | 19 |
| 15  | 27    | 19 | 19 | 37 | 19 | 121 | 13 | 9  | 9  | 12 | 9     | 9  | 61 | 14 | 12 | 10 | 10 | 10 | 75 | 13 | 11 | 17 |
| 16  | 36    | 36 | 43 | 23 | 39 | 177 | 18 | 7  | 10 | 14 | 15    | 9  | 73 | 9  | 7  | 7  | 9  | 7  | 39 | 18 | 15 | 17 |
| 17  | 39    | 32 | 35 | 34 | 35 | 175 | 8  | 7  | 6  | 9  | 8     | 7  | 45 | 16 | 7  | 14 | 11 | 9  | 57 | 17 | 22 | 21 |
| 18  | 47    | 34 | 37 | 36 | 37 | 185 | 10 | 9  | 7  | 11 | 10    | 9  | 56 | 17 | 8  | 14 | 11 | 11 | 6  | 17 | 19 | 21 |
| 19  | 40    | 33 | 35 | 35 | 36 | 179 | 9  | 8  | 6  | 10 | 8     | 8  | 49 | 17 | 8  | 14 | 11 | 9  | 59 | 16 | 18 | 21 |
| 20  | 40    | 33 | 36 | 35 | 36 | 180 | 9  | 8  | 6  | 10 | 9     | 8  | 50 | 17 | 8  | 14 | 11 | 10 | 60 | 16 | 18 | 21 |
| 21  | 39    | 32 | 35 | 34 | 35 | 175 | 8  | 7  | 5  | 9  | 8     | 7  | 47 | 16 | 7  | 14 | 10 | 9  | 56 | 14 | 16 | 19 |
| 22  | 39    | 23 | 40 | 27 | 28 | 167 | 12 | 9  | 10 | 8  | 8     | 6  | 53 | 14 | 10 | 8  | 10 | 10 | 52 | 24 | 27 | 28 |
| 23  | 39    | 23 | 41 | 28 | 31 | 162 | 12 | 9  | 10 | 8  | 7     | 6  | 52 | 14 | 10 | 9  | 11 | 10 | 51 | 23 | 26 | 24 |
| 24  | 37    | 24 | 40 | 28 | 27 | 156 | 11 | 8  | 8  | 9  | 8     | 5  | 49 | 13 | 9  | 9  | 11 | 11 | 53 | 24 | 27 | 24 |
| 25  | 37    | 21 | 38 | 25 | 26 | 171 | 10 | 7  | 8  | 6  | 7     | 44 | 12 | 8  | 6  | 8  | 9  | 42 | 20 | 23 | 20 |    |
| 26  | 38    | 22 | 39 | 26 | 27 | 152 | 11 | 8  | 9  | 7  | 7     | 5  | 47 | 13 | 9  | 7  | 9  | 9  | 44 | 22 | 25 | 22 |
| 27  | 39    | 23 | 40 | 27 | 28 | 154 | 12 | 9  | 10 | 8  | 8     | 6  | 53 | 14 | 10 | 8  | 10 | 10 | 52 | 24 | 27 | 21 |
| 28  | 40    | 24 | 41 | 28 | 29 | 162 | 13 | 10 | 7  | 9  | 9     | 6  | 54 | 15 | 11 | 9  | 11 | 10 | 56 | 26 | 30 | 29 |
| 29  | 33    | 47 | 40 | 28 | 32 | 180 | 18 | 9  | 6  | 14 | 14    | 10 | 71 | 9  | 10 | 15 | 15 | 10 | 59 | 29 | 25 | 29 |
| 30  | 31    | 47 | 40 | 28 | 32 | 176 | 18 | 9  | 10 | 14 | 13    | 10 | 74 | 9  | 10 | 15 | 12 | 8  | 34 | 22 | 21 | 14 |
| 31  | 36    | 36 | 27 | 39 | 33 | 121 | 6  | 10 | 5  | 14 | 4     | 4  | 51 | 6  | 10 | 9  | 10 | 8  | 43 | 21 | 15 | 17 |
| 32  | 36    | 34 | 32 | 36 | 31 | 169 | 12 | 4  | 10 | 10 | 10    | 6  | 52 | 12 | 10 | 8  | 8  | 8  | 48 | 18 | 15 | 17 |
| 33  | 31    | 23 | 34 | 21 | 18 | 121 | 13 | 8  | 13 | 12 | 12    | 7  | 65 | 10 | 11 | 12 | 10 | 6  | 49 | 23 | 20 | 21 |
| 34  | 39    | 33 | 42 | 44 | 36 | 191 | 17 | 6  | 10 | 15 | 12    | 9  | 69 | 19 | 15 | 13 | 11 | 73 | 10 | 20 | 17 |    |
| 35  | 38    | 23 | 38 | 27 | 28 | 154 | 12 | 9  | 7  | 8  | 8     | 6  | 50 | 14 | 12 | 8  | 10 | 10 | 54 | 24 | 26 | 23 |
| 36  | 38    | 25 | 39 | 28 | 28 | 158 | 12 | 9  | 10 | 8  | 8     | 6  | 53 | 14 | 12 | 8  | 9  | 12 | 55 | 8  | 19 | 16 |
| 37  | 31    | 30 | 31 | 34 | 31 | 157 | 10 | 6  | 8  | 10 | 8     | 6  | 48 | 14 | 11 | 12 | 10 | 8  | 53 | 19 | 20 | 22 |
| 38  | 37    | 41 | 42 | 37 | 31 | 167 | 13 | 9  | 6  | 10 | 6     | 44 | 12 | 7  | 10 | 9  | 9  | 41 | 15 | 16 | 13 |    |

|    |    |    |    |    |    |     |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |
|----|----|----|----|----|----|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|
| 41 | 31 | 23 | 34 | 21 | 16 | 15  | 11 | 11 | 5  | 61 | 14 | 11 | 15 | 11 | 14 | 65 | 12 | 21 | 11 | 11 | 12 | 21 | 12 | 11 | 11 | 12 | 14  | 15  | 16  | 15  | 16  | 18  | 121 |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |
| 42 | 38 | 39 | 46 | 30 | 30 | 183 | 15 | 10 | 11 | 11 | 11 | 12 | 9  | 11 | 11 | 11 | 53 | 13 | 17 | 16 | 12 | 12 | 12 | 12 | 12 | 14 | 14  | 14  | 14  | 14  | 13  | 18  | 19  | 19  | 19  | 116 |     |     |     |     |     |     |     |     |     |    |    |    |
| 43 | 37 | 39 | 37 | 27 | 33 | 13  | 14 | 6  | 7  | 10 | 10 | 5  | 52 | 14 | 12 | 9  | 11 | 53 | 13 | 14 | 14 | 14 | 14 | 14 | 14 | 14 | 14  | 14  | 14  | 14  | 14  | 14  | 14  | 14  | 14  | 14  |     |     |     |     |     |     |     |     |     |    |    |    |
| 44 | 31 | 40 | 36 | 32 | 36 | 175 | 14 | 8  | 9  | 10 | 12 | 8  | 61 | 12 | 12 | 10 | 10 | 9  | 53 | 13 | 14 | 14 | 14 | 14 | 14 | 14 | 14  | 14  | 14  | 14  | 14  | 14  | 14  | 14  | 14  | 14  |     |     |     |     |     |     |     |     |     |    |    |    |
| 45 | 39 | 41 | 42 | 28 | 33 | 183 | 14 | 9  | 9  | 12 | 12 | 9  | 65 | 17 | 13 | 12 | 12 | 67 | 17 | 19 | 17 | 17 | 17 | 17 | 17 | 17 | 17  | 17  | 17  | 17  | 17  | 17  | 17  | 17  | 17  | 17  |     |     |     |     |     |     |     |     |     |    |    |    |
| 46 | 46 | 38 | 30 | 38 | 30 | 182 | 13 | 6  | 10 | 5  | 3  | 3  | 40 | 12 | 6  | 8  | 6  | 9  | 41 | 15 | 16 | 17 | 15 | 14 | 14 | 14 | 14  | 14  | 14  | 14  | 14  | 14  | 14  | 14  | 14  | 14  |     |     |     |     |     |     |     |     |     |    |    |    |
| 47 | 34 | 31 | 30 | 34 | 32 | 161 | 11 | 5  | 7  | 9  | 11 | 4  | 47 | 10 | 5  | 12 | 10 | 7  | 44 | 23 | 21 | 20 | 23 | 23 | 23 | 23 | 23  | 23  | 23  | 23  | 23  | 23  | 23  | 23  | 23  | 23  |     |     |     |     |     |     |     |     |     |    |    |    |
| 48 | 34 | 34 | 36 | 40 | 28 | 172 | 18 | 7  | 9  | 9  | 13 | 6  | 62 | 13 | 8  | 11 | 5  | 5  | 42 | 21 | 25 | 17 | 21 | 20 | 23 | 23 | 23  | 23  | 23  | 23  | 23  | 23  | 23  | 23  | 23  | 23  |     |     |     |     |     |     |     |     |     |    |    |    |
| 49 | 35 | 36 | 36 | 27 | 34 | 168 | 16 | 4  | 8  | 10 | 10 | 8  | 56 | 12 | 11 | 10 | 11 | 55 | 17 | 14 | 17 | 18 | 17 | 17 | 17 | 17 | 17  | 17  | 17  | 17  | 17  | 17  | 17  | 17  | 17  | 17  |     |     |     |     |     |     |     |     |     |    |    |    |
| 50 | 35 | 36 | 36 | 27 | 34 | 168 | 16 | 8  | 8  | 12 | 10 | 8  | 62 | 12 | 12 | 10 | 12 | 58 | 16 | 15 | 17 | 18 | 18 | 17 | 18 | 17 | 18  | 17  | 18  | 17  | 18  | 17  | 18  | 17  | 18  | 17  |     |     |     |     |     |     |     |     |     |    |    |    |
| 51 | 33 | 38 | 36 | 27 | 34 | 168 | 16 | 8  | 8  | 13 | 15 | 8  | 68 | 14 | 12 | 12 | 10 | 60 | 13 | 11 | 13 | 14 | 9  | 12 | 9  | 12 | 9   | 13  | 9   | 13  | 9   | 13  | 9   | 13  | 9   | 13  | 9   |     |     |     |     |     |     |     |     |    |    |    |
| 52 | 35 | 36 | 36 | 27 | 36 | 170 | 16 | 8  | 8  | 12 | 10 | 8  | 62 | 16 | 8  | 6  | 8  | 4  | 42 | 12 | 14 | 16 | 12 | 13 | 15 | 19 | 17  | 18  | 17  | 18  | 17  | 18  | 17  | 18  | 17  | 18  |     |     |     |     |     |     |     |     |     |    |    |    |
| 53 | 37 | 36 | 36 | 27 | 30 | 166 | 16 | 8  | 8  | 12 | 10 | 8  | 62 | 12 | 12 | 10 | 12 | 58 | 16 | 15 | 17 | 18 | 17 | 16 | 15 | 18 | 17  | 16  | 15  | 18  | 17  | 16  | 15  | 18  | 17  | 16  |     |     |     |     |     |     |     |     |     |    |    |    |
| 54 | 36 | 40 | 43 | 28 | 37 | 184 | 18 | 9  | 9  | 11 | 12 | 6  | 65 | 14 | 12 | 12 | 9  | 11 | 58 | 17 | 16 | 13 | 13 | 14 | 8  | 20 | 15  | 116 | 15  | 116 | 15  | 116 | 15  | 116 | 15  | 116 |     |     |     |     |     |     |     |     |     |    |    |    |
| 55 | 40 | 30 | 28 | 37 | 34 | 169 | 12 | 5  | 8  | 10 | 5  | 3  | 43 | 12 | 6  | 8  | 6  | 9  | 41 | 10 | 12 | 9  | 10 | 14 | 14 | 12 | 10  | 9   | 10  | 14  | 12  | 10  | 9   | 10  | 9   | 10  | 9   |     |     |     |     |     |     |     |     |    |    |    |
| 56 | 41 | 33 | 40 | 36 | 35 | 185 | 9  | 8  | 6  | 10 | 9  | 8  | 50 | 17 | 8  | 14 | 11 | 10 | 60 | 17 | 17 | 21 | 20 | 22 | 9  | 18 | 17  | 17  | 17  | 17  | 17  | 17  | 17  | 17  | 17  | 17  |     |     |     |     |     |     |     |     |     |    |    |    |
| 57 | 40 | 33 | 39 | 35 | 34 | 181 | 9  | 8  | 6  | 10 | 9  | 8  | 50 | 17 | 8  | 14 | 11 | 10 | 60 | 15 | 17 | 19 | 14 | 18 | 10 | 19 | 18  | 19  | 18  | 19  | 18  | 19  | 18  | 19  | 18  | 19  | 18  |     |     |     |     |     |     |     |     |    |    |    |
| 58 | 39 | 41 | 42 | 28 | 33 | 182 | 14 | 9  | 9  | 12 | 12 | 9  | 65 | 17 | 13 | 13 | 12 | 12 | 67 | 17 | 19 | 17 | 17 | 18 | 19 | 19 | 20  | 20  | 20  | 20  | 20  | 20  | 20  | 20  | 20  | 20  | 20  |     |     |     |     |     |     |     |     |    |    |    |
| 59 | 31 | 35 | 39 | 35 | 29 | 169 | 19 | 8  | 9  | 5  | 2  | 3  | 46 | 20 | 12 | 9  | 5  | 4  | 50 | 24 | 20 | 19 | 19 | 28 | 17 | 15 | 19  | 19  | 19  | 19  | 19  | 19  | 19  | 19  | 19  | 19  | 19  | 19  | 19  | 19  | 19  |     |     |     |     |    |    |    |
| 60 | 30 | 24 | 37 | 18 | 22 | 131 | 13 | 7  | 9  | 11 | 9  | 7  | 56 | 10 | 10 | 12 | 10 | 6  | 48 | 23 | 20 | 21 | 20 | 28 | 17 | 15 | 17  | 17  | 17  | 17  | 17  | 17  | 17  | 17  | 17  | 17  | 17  | 17  | 17  | 17  | 17  |     |     |     |     |    |    |    |
| 61 | 30 | 23 | 37 | 17 | 22 | 129 | 15 | 8  | 12 | 12 | 10 | 9  | 66 | 10 | 11 | 12 | 10 | 6  | 49 | 22 | 20 | 21 | 17 | 28 | 17 | 15 | 19  | 19  | 19  | 19  | 19  | 19  | 19  | 19  | 19  | 19  | 19  | 19  | 19  | 19  | 19  |     |     |     |     |    |    |    |
| 62 | 31 | 24 | 37 | 18 | 22 | 132 | 17 | 8  | 10 | 10 | 12 | 7  | 61 | 10 | 10 | 12 | 10 | 6  | 48 | 23 | 20 | 21 | 19 | 28 | 17 | 15 | 19  | 19  | 19  | 19  | 19  | 19  | 19  | 19  | 19  | 19  | 19  | 19  | 19  | 19  | 19  |     |     |     |     |    |    |    |
| 63 | 37 | 38 | 41 | 15 | 33 | 61  | 9  | 7  | 9  | 9  | 11 | 5  | 56 | 17 | 10 | 13 | 14 | 12 | 66 | 18 | 15 | 16 | 23 | 23 | 16 | 17 | 15  | 15  | 15  | 15  | 15  | 15  | 15  | 15  | 15  | 15  | 15  | 15  | 15  | 15  | 15  | 15  |     |     |     |    |    |    |
| 64 | 47 | 48 | 42 | 36 | 34 | 201 | 20 | 10 | 9  | 15 | 12 | 4  | 70 | 20 | 15 | 15 | 15 | 80 | 16 | 17 | 18 | 13 | 15 | 15 | 15 | 15 | 15  | 15  | 15  | 15  | 15  | 15  | 15  | 15  | 15  | 15  | 15  | 15  | 15  | 15  |     |     |     |     |     |    |    |    |
| 65 | 39 | 46 | 46 | 26 | 30 | 182 | 16 | 10 | 7  | 13 | 11 | 2  | 59 | 20 | 15 | 15 | 15 | 76 | 22 | 24 | 21 | 25 | 25 | 25 | 25 | 25 | 25  | 25  | 25  | 25  | 25  | 25  | 25  | 25  | 25  | 25  | 25  | 25  | 25  |     |     |     |     |     |     |    |    |    |
| 66 | 40 | 48 | 44 | 25 | 33 | 190 | 19 | 10 | 10 | 14 | 15 | 6  | 64 | 16 | 13 | 15 | 13 | 70 | 20 | 18 | 20 | 18 | 19 | 19 | 19 | 19 | 19  | 19  | 19  | 19  | 19  | 19  | 19  | 19  | 19  | 19  | 19  | 19  | 19  | 19  |     |     |     |     |     |    |    |    |
| 67 | 39 | 34 | 33 | 36 | 30 | 12  | 10 | 7  | 7  | 10 | 9  | 6  | 49 | 13 | 10 | 12 | 9  | 11 | 53 | 16 | 11 | 13 | 19 | 15 | 14 | 19 | 19  | 19  | 19  | 19  | 19  | 19  | 19  | 19  | 19  | 19  | 19  | 19  | 19  | 19  | 19  | 19  |     |     |     |    |    |    |
| 68 | 31 | 30 | 31 | 35 | 30 | 57  | 10 | 7  | 8  | 10 | 9  | 7  | 54 | 14 | 11 | 12 | 13 | 12 | 61 | 17 | 16 | 18 | 19 | 18 | 17 | 16 | 17  | 16  | 17  | 16  | 17  | 16  | 17  | 16  | 17  | 16  | 17  | 16  | 17  | 16  | 17  |     |     |     |     |    |    |    |
| 69 | 35 | 29 | 36 | 26 | 20 | 146 | 17 | 10 | 9  | 15 | 12 | 10 | 6  | 63 | 13 | 11 | 13 | 14 | 10 | 64 | 18 | 17 | 14 | 14 | 15 | 10 | 21  | 17  | 17  | 16  | 17  | 17  | 17  | 17  | 17  | 17  | 17  | 17  | 17  | 17  | 17  | 17  | 17  | 17  | 17  |    |    |    |
| 70 | 37 | 39 | 38 | 28 | 33 | 15  | 14 | 7  | 8  | 11 | 12 | 6  | 58 | 14 | 13 | 12 | 10 | 13 | 62 | 13 | 17 | 18 | 14 | 15 | 16 | 18 | 18  | 19  | 19  | 19  | 19  | 19  | 19  | 19  | 19  | 19  | 19  | 19  | 19  | 19  | 19  | 19  |     |     |     |    |    |    |
| 71 | 32 | 40 | 37 | 33 | 37 | 19  | 14 | 8  | 9  | 10 | 12 | 8  | 6  | 12 | 13 | 11 | 10 | 10 | 56 | 13 | 15 | 15 | 13 | 12 | 14 | 19 | 20  | 19  | 21  | 19  | 20  | 19  | 21  | 19  | 20  | 19  | 21  | 19  | 20  | 19  | 21  | 19  |     |     |     |    |    |    |
| 72 | 38 | 37 | 35 | 28 | 31 | 169 | 16 | 8  | 9  | 13 | 11 | 8  | 63 | 13 | 12 | 13 | 11 | 12 | 61 | 17 | 16 | 18 | 19 | 18 | 17 | 14 | 14  | 15  | 10  | 21  | 17  | 17  | 16  | 17  | 17  | 17  | 17  | 17  | 17  | 17  | 17  | 17  |     |     |     |    |    |    |
| 73 | 37 | 41 | 44 | 29 | 38 | 189 | 19 | 10 | 8  | 12 | 13 | 7  | 69 | 15 | 13 | 14 | 10 | 12 | 64 | 18 | 17 | 14 | 14 | 15 | 10 | 21 | 17  | 17  | 16  | 17  | 17  | 17  | 17  | 17  | 17  | 17  | 17  | 17  | 17  | 17  | 17  | 17  |     |     |     |    |    |    |
| 74 | 46 | 47 | 41 | 35 | 33 | 202 | 19 | 10 | 9  | 15 | 13 | 5  | 71 | 20 | 15 | 14 | 13 | 15 | 77 | 16 | 17 | 18 | 17 | 18 | 17 | 14 | 14  | 15  | 10  | 27  | 23  | 26  | 27  | 23  | 26  | 27  | 23  | 26  | 27  | 23  | 26  | 27  | 23  | 26  | 27  | 23 | 26 | 27 |
| 75 | 41 | 47 | 45 | 26 | 34 | 192 | 20 | 10 | 9  | 14 | 15 | 7  | 71 | 16 | 14 | 15 | 14 | 12 | 71 | 20 | 19 | 19 | 17 | 18 | 17 | 14 | 14  | 15  | 10  | 24  | 27  | 26  | 27  | 23  | 26  | 27  | 23  | 26  | 27  | 23  | 26  | 27  | 23  | 26  | 27  | 23 | 26 | 27 |
| 76 | 39 | 34 | 33 | 36 | 30 | 172 | 10 | 8  | 9  | 10 | 9  | 7  | 53 | 13 | 10 | 13 | 10 | 14 | 60 | 18 | 13 | 15 | 19 | 17 | 16 | 21 | 139 | 139 | 139 | 139 | 139 | 139 | 139 | 139 | 139 | 139 | 139 | 139 | 139 | 139 | 139 | 139 | 139 | 139 | 139 |    |    |    |
| 77 | 38 | 22 | 40 | 26 | 27 | 153 | 11 | 9  | 10 | 7  | 6  | 50 | 13 | 9  | 8  | 10 | 10 | 50 | 23 | 26 | 22 | 27 | 26 | 25 | 14 | 14 | 14  | 14  | 14  | 14  | 14  | 14  | 14  | 14  | 14  | 14  | 14  | 14  | 14  | 14  | 14  | 14  | 14  |     |     |    |    |    |
| 78 | 35 | 20 | 38 | 24 | 25 | 142 | 10 | 8  | 9  | 8  | 7  | 7  | 49 | 1  |    |    |    |    |    |    |    |    |    |    |    |    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |

|     |    |    |    |    |    |     |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |     |     |
|-----|----|----|----|----|----|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|-----|-----|
| 84  | 47 | 40 | 40 | 25 | 33 | 135 | 13 | 9  | 8  | 11 | 12 | 9  | 62 | 17 | 13 | 11 | 12 | 14 | 67 | 17 | 15 | 18 | 16 | 17 | 18 | 19  | 138 |     |
| 85  | 39 | 24 | 39 | 28 | 27 | 157 | 11 | 9  | 10 | 9  | 8  | 7  | 54 | 15 | 12 | 10 | 11 | 9  | 57 | 25 | 26 | 25 | 28 | 27 | 18 | 16  | 20  |     |
| 86  | 35 | 34 | 42 | 27 | 33 | 77  | 10 | 9  | 10 | 11 | 13 | 9  | 62 | 10 | 11 | 10 | 12 | 9  | 53 | 15 | 12 | 19 | 17 | 15 | 16 | 23  | 21  |     |
| 87  | 45 | 41 | 42 | 25 | 37 | 90  | 17 | 10 | 6  | 12 | 13 | 3  | 61 | 16 | 13 | 10 | 12 | 9  | 60 | 16 | 18 | 17 | 18 | 17 | 14 | 19  | 19  |     |
| 88  | 42 | 43 | 43 | 21 | 34 | 183 | 19 | 10 | 10 | 13 | 10 | 8  | 70 | 16 | 14 | 13 | 14 | 9  | 66 | 18 | 17 | 17 | 17 | 16 | 16 | 12  | 20  |     |
| 89  | 40 | 37 | 42 | 25 | 33 | 177 | 17 | 8  | 8  | 12 | 12 | 6  | 63 | 15 | 12 | 1  | 13 | 12 | 53 | 17 | 18 | 17 | 20 | 19 | 18 | 16  | 18  |     |
| 90  | 46 | 37 | 30 | 38 | 30 | 81  | 12 | 5  | 8  | 11 | 8  | 8  | 52 | 11 | 9  | 7  | 12 | 8  | 47 | 19 | 21 | 25 | 13 | 19 | 19 | 9   | 14  |     |
| 91  | 36 | 43 | 39 | 22 | 36 | 176 | 17 | 7  | 10 | 11 | 12 | 7  | 64 | 10 | 12 | 9  | 11 | 14 | 56 | 19 | 8  | 13 | 21 | 19 | 10 | 12  | 12  |     |
| 92  | 40 | 42 | 43 | 34 | 35 | 194 | 17 | 9  | 9  | 12 | 13 | 8  | 68 | 15 | 10 | 12 | 14 | 14 | 66 | 8  | 5  | 7  | 10 | 11 | 9  | 10  | 70  |     |
| 93  | 28 | 40 | 39 | 22 | 33 | 162 | 17 | 10 | 6  | 12 | 9  | 7  | 61 | 15 | 12 | 8  | 12 | 8  | 55 | 12 | 21 | 18 | 19 | 13 | 17 | 20  | 18  |     |
| 94  | 37 | 41 | 42 | 27 | 35 | 182 | 15 | 9  | 8  | 12 | 13 | 5  | 82 | 14 | 11 | 9  | 6  | 51 | 16 | 14 | 13 | 13 | 11 | 15 | 17 | 13  | 112 |     |
| 95  | 32 | 38 | 34 | 23 | 34 | 161 | 15 | 8  | 11 | 9  | 11 | 12 | 66 | 12 | 5  | 14 | 13 | 13 | 57 | 17 | 15 | 20 | 18 | 11 | 20 | 19  | 19  |     |
| 96  | 33 | 36 | 43 | 40 | 40 | 192 | 12 | 9  | 6  | 12 | 9  | 7  | 53 | 8  | 8  | 12 | 8  | 12 | 48 | 16 | 15 | 16 | 14 | 13 | 13 | 19  | 24  |     |
| 97  | 31 | 42 | 36 | 30 | 32 | 177 | 13 | 6  | 7  | 11 | 12 | 7  | 56 | 10 | 11 | 12 | 8  | 9  | 50 | 17 | 16 | 17 | 17 | 15 | 16 | 18  | 15  |     |
| 98  | 44 | 47 | 44 | 43 | 41 | 219 | 9  | 6  | 9  | 12 | 10 | 5  | 51 | 12 | 5  | 10 | 11 | 10 | 48 | 18 | 13 | 16 | 8  | 11 | 11 | 17  | 14  |     |
| 99  | 39 | 41 | 42 | 25 | 35 | 132 | 14 | 9  | 8  | 12 | 12 | 9  | 64 | 17 | 13 | 13 | 11 | 12 | 66 | 25 | 25 | 24 | 22 | 28 | 25 | 24  | 29  | 202 |
| 100 | 40 | 38 | 37 | 27 | 31 | 173 | 15 | 8  | 10 | 11 | 7  | 61 | 12 | 7  | 10 | 10 | 10 | 15 | 54 | 24 | 31 | 29 | 25 | 23 | 18 | 19  | 21  |     |
| 101 | 30 | 36 | 34 | 29 | 29 | 157 | 15 | 9  | 10 | 15 | 12 | 8  | 69 | 14 | 10 | 14 | 9  | 11 | 58 | 18 | 15 | 15 | 13 | 11 | 15 | 18  | 120 |     |
| 102 | 38 | 34 | 41 | 32 | 30 | 175 | 15 | 9  | 10 | 10 | 9  | 8  | 61 | 17 | 12 | 12 | 12 | 14 | 67 | 16 | 19 | 27 | 20 | 27 | 17 | 21  | 23  |     |
| 103 | 41 | 32 | 31 | 36 | 33 | 173 | 13 | 5  | 9  | 11 | 9  | 7  | 54 | 10 | 7  | 6  | 9  | 11 | 43 | 19 | 23 | 17 | 21 | 20 | 22 | 25  | 17  |     |
| 104 | 36 | 44 | 40 | 32 | 35 | 187 | 16 | 9  | 8  | 12 | 12 | 4  | 61 | 12 | 6  | 12 | 11 | 7  | 48 | 19 | 15 | 17 | 20 | 17 | 16 | 17  | 18  |     |
| 105 | 35 | 42 | 42 | 31 | 33 | 183 | 20 | 10 | 7  | 11 | 11 | 6  | 65 | 20 | 15 | 10 | 10 | 10 | 66 | 14 | 14 | 16 | 16 | 17 | 9  | 13  | 25  |     |
| 106 | 30 | 39 | 35 | 36 | 36 | 178 | 12 | 8  | 8  | 11 | 7  | 54 | 10 | 10 | 12 | 10 | 12 | 12 | 54 | 17 | 22 | 22 | 17 | 17 | 13 | 14  | 37  |     |
| 107 | 45 | 38 | 31 | 39 | 39 | 184 | 14 | 9  | 6  | 11 | 15 | 6  | 61 | 14 | 15 | 15 | 15 | 15 | 8  | 67 | 20 | 14 | 14 | 12 | 13 | 12  | 22  | 19  |
| 108 | 31 | 34 | 44 | 30 | 33 | 172 | 16 | 8  | 5  | 7  | 9  | 4  | 49 | 15 | 12 | 8  | 13 | 10 | 58 | 18 | 25 | 16 | 23 | 14 | 19 | 20  | 21  |     |
| 109 | 34 | 40 | 37 | 26 | 24 | 16  | 15 | 7  | 9  | 9  | 11 | 8  | 59 | 16 | 10 | 11 | 11 | 11 | 59 | 15 | 21 | 17 | 21 | 15 | 15 | 18  | 15  |     |
| 110 | 30 | 36 | 38 | 26 | 24 | 151 | 13 | 9  | 12 | 10 | 11 | 9  | 64 | 9  | 10 | 7  | 6  | 9  | 41 | 14 | 18 | 14 | 21 | 11 | 13 | 14  | 22  |     |
| 111 | 35 | 44 | 45 | 35 | 39 | 98  | 16 | 10 | 8  | 11 | 14 | 8  | 67 | 16 | 15 | 15 | 11 | 15 | 72 | 13 | 20 | 14 | 15 | 15 | 18 | 22  | 17  |     |
| 112 | 32 | 40 | 36 | 30 | 38 | 176 | 14 | 9  | 9  | 10 | 12 | 2  | 56 | 10 | 14 | 12 | 9  | 57 | 18 | 15 | 21 | 18 | 15 | 17 | 12 | 13  |     |     |
| 113 | 28 | 35 | 36 | 35 | 33 | 161 | 7  | 6  | 7  | 8  | 6  | 40 | 11 | 10 | 12 | 13 | 8  | 54 | 12 | 14 | 17 | 10 | 15 | 15 | 17 | 21  |     |     |
| 114 | 33 | 35 | 20 | 24 | 37 | 14  | 7  | 10 | 11 | 13 | 9  | 64 | 16 | 7  | 8  | 6  | 7  | 44 | 23 | 22 | 24 | 18 | 24 | 26 | 18 | 187 |     |     |
| 115 | 42 | 33 | 44 | 35 | 33 | 187 | 17 | 9  | 10 | 12 | 13 | 6  | 67 | 10 | 6  | 9  | 12 | 9  | 46 | 18 | 21 | 23 | 19 | 20 | 14 | 17  | 149 |     |
| 116 | 40 | 33 | 36 | 35 | 36 | 180 | 9  | 8  | 7  | 10 | 9  | 8  | 51 | 18 | 9  | 15 | 12 | 12 | 66 | 16 | 18 | 21 | 20 | 21 | 10 | 18  | 19  |     |
| 117 | 39 | 24 | 41 | 27 | 29 | 160 | 13 | 10 | 9  | 9  | 8  | 7  | 56 | 14 | 10 | 9  | 12 | 11 | 56 | 24 | 27 | 25 | 28 | 27 | 16 | 15  | 19  |     |
| 118 | 40 | 38 | 45 | 32 | 39 | 194 | 11 | 7  | 6  | 8  | 11 | 6  | 49 | 6  | 8  | 12 | 7  | 13 | 46 | 11 | 13 | 12 | 10 | 22 | 19 | 19  | 19  |     |
| 119 | 24 | 37 | 45 | 34 | 37 | 177 | 11 | 7  | 6  | 11 | 9  | 2  | 46 | 7  | 9  | 9  | 10 | 44 | 11 | 13 | 11 | 13 | 12 | 10 | 22 | 14  |     |     |
| 120 | 31 | 23 | 34 | 21 | 18 | 127 | 13 | 8  | 6  | 11 | 9  | 7  | 54 | 10 | 11 | 12 | 10 | 6  | 49 | 23 | 20 | 21 | 22 | 28 | 18 | 17  | 19  |     |
| 121 | 28 | 24 | 38 | 21 | 18 | 129 | 13 | 8  | 7  | 11 | 9  | 4  | 52 | 10 | 11 | 12 | 6  | 49 | 23 | 20 | 21 | 22 | 29 | 17 | 15 | 18  |     |     |
| 122 | 44 | 38 | 40 | 22 | 30 | 174 | 15 | 5  | 9  | 10 | 7  | 7  | 53 | 18 | 11 | 15 | 9  | 9  | 62 | 16 | 16 | 15 | 22 | 20 | 19 | 19  | 42  |     |
| 123 | 42 | 43 | 49 | 31 | 36 | 201 | 15 | 9  | 7  | 12 | 6  | 7  | 56 | 13 | 12 | 11 | 11 | 11 | 58 | 23 | 18 | 21 | 19 | 20 | 23 | 20  | 24  |     |
| 124 | 36 | 43 | 42 | 35 | 30 | 186 | 16 | 8  | 10 | 12 | 9  | 6  | 61 | 12 | 7  | 10 | 8  | 6  | 43 | 19 | 10 | 18 | 8  | 21 | 17 | 22  | 33  |     |
| 125 | 35 | 34 | 41 | 33 | 34 | 177 | 16 | 8  | 8  | 10 | 12 | 6  | 60 | 16 | 12 | 12 | 10 | 62 | 15 | 13 | 14 | 10 | 5  | 5  | 5  | 18  |     |     |
| 126 | 33 | 33 | 41 | 33 | 34 | 174 | 16 | 8  | 8  | 10 | 12 | 6  | 60 | 16 | 12 | 12 | 12 | 12 | 64 | 19 | 19 | 19 | 16 | 10 | 12 | 20  | 14  |     |

|     |    |    |    |    |     |     |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|-----|----|----|----|----|-----|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| 127 | 46 | 47 | 46 | 37 | 35  | 21  | 15 | 8  | 7  | 11 | 9  | 6  | 59 | 10 | 12 | 11 | 9  | 54 | 18 | 19 | 15 | 14 | 11 | 11 |    |
| 128 | 45 | 41 | 46 | 36 | 35  | 203 | 15 | 9  | 8  | 13 | 11 | 9  | 65 | 10 | 13 | 12 | 11 | 57 | 15 | 16 | 12 | 13 | 10 | 19 |    |
| 129 | 35 | 36 | 35 | 35 | 37  | 178 | 16 | 7  | 9  | 9  | 15 | 5  | 61 | 15 | 10 | 9  | 6  | 48 | 21 | 20 | 27 | 28 | 23 | 32 |    |
| 130 | 45 | 38 | 44 | 28 | 36  | 191 | 14 | 8  | 10 | 14 | 13 | 8  | 67 | 12 | 11 | 10 | 13 | 12 | 58 | 21 | 22 | 20 | 25 | 17 | 18 |
| 131 | 35 | 36 | 37 | 31 | 35  | 174 | 20 | 6  | 7  | 10 | 8  | 5  | 56 | 14 | 12 | 12 | 10 | 12 | 60 | 14 | 14 | 16 | 12 | 15 | 13 |
| 132 | 23 | 34 | 33 | 17 | 30  | 137 | 11 | 5  | 10 | 13 | 8  | 6  | 53 | 11 | 11 | 10 | 10 | 10 | 52 | 22 | 21 | 23 | 24 | 19 | 21 |
| 133 | 33 | 36 | 33 | 26 | 31  | 159 | 10 | 8  | 8  | 10 | 10 | 4  | 50 | 14 | 12 | 12 | 12 | 12 | 62 | 16 | 11 | 19 | 15 | 13 | 16 |
| 134 | 40 | 41 | 39 | 23 | 32  | 173 | 16 | 10 | 8  | 14 | 14 | 10 | 72 | 16 | 13 | 14 | 12 | 13 | 68 | 18 | 19 | 21 | 17 | 13 | 14 |
| 135 | 36 | 41 | 41 | 33 | 23  | 174 | 14 | 10 | 10 | 12 | 13 | 4  | 63 | 9  | 12 | 15 | 12 | 15 | 63 | 12 | 14 | 14 | 11 | 5  | 10 |
| 136 | 37 | 41 | 23 | 27 | 165 | 15  | 8  | 8  | 12 | 14 | 6  | 63 | 17 | 12 | 12 | 12 | 13 | 66 | 18 | 18 | 17 | 20 | 19 | 18 |    |
| 137 | 40 | 38 | 42 | 40 | 33  | 193 | 12 | 8  | 8  | 12 | 11 | 4  | 55 | 10 | 12 | 12 | 9  | 10 | 53 | 20 | 14 | 19 | 21 | 11 | 15 |
| 138 | 31 | 46 | 41 | 30 | 31  | 179 | 18 | 10 | 9  | 13 | 11 | 6  | 67 | 11 | 13 | 9  | 12 | 10 | 55 | 21 | 18 | 19 | 18 | 17 | 18 |
| 139 | 35 | 36 | 37 | 33 | 35  | 176 | 16 | 6  | 7  | 10 | 6  | 5  | 59 | 13 | 13 | 11 | 8  | 12 | 57 | 14 | 16 | 16 | 12 | 15 | 13 |
| 140 | 40 | 41 | 42 | 26 | 37  | 186 | 18 | 9  | 10 | 10 | 12 | 4  | 63 | 12 | 10 | 9  | 11 | 8  | 50 | 14 | 12 | 16 | 16 | 19 | 20 |
| 141 | 36 | 41 | 33 | 23 | 23  | 174 | 16 | 8  | 9  | 13 | 12 | 6  | 64 | 12 | 10 | 12 | 12 | 9  | 55 | 13 | 15 | 16 | 13 | 9  | 12 |
| 142 | 40 | 40 | 42 | 30 | 35  | 187 | 18 | 9  | 10 | 10 | 12 | 4  | 63 | 11 | 10 | 9  | 11 | 8  | 49 | 15 | 12 | 17 | 17 | 19 | 10 |
| 143 | 37 | 40 | 42 | 25 | 31  | 175 | 14 | 9  | 8  | 12 | 12 | 9  | 64 | 17 | 12 | 13 | 12 | 11 | 63 | 15 | 17 | 20 | 19 | 21 | 14 |
| 144 | 35 | 34 | 30 | 33 | 33  | 166 | 11 | 8  | 6  | 12 | 9  | 8  | 54 | 12 | 6  | 14 | 11 | 8  | 5  | 12 | 17 | 22 | 16 | 24 | 11 |
| 145 | 28 | 35 | 36 | 30 | 30  | 159 | 17 | 7  | 9  | 12 | 9  | 9  | 66 | 16 | 13 | 6  | 14 | 8  | 57 | 15 | 14 | 16 | 14 | 14 | 8  |
| 146 | 33 | 40 | 26 | 33 | 28  | 160 | 13 | 6  | 7  | 9  | 7  | 7  | 49 | 12 | 8  | 10 | 9  | 7  | 46 | 14 | 17 | 20 | 8  | 14 | 18 |
| 147 | 33 | 39 | 42 | 33 | 37  | 184 | 11 | 10 | 10 | 12 | 12 | 5  | 60 | 7  | 12 | 8  | 8  | 9  | 47 | 16 | 15 | 18 | 12 | 17 | 13 |
| 148 | 36 | 37 | 35 | 33 | 31  | 172 | 8  | 5  | 6  | 5  | 9  | 4  | 37 | 12 | 11 | 12 | 10 | 10 | 53 | 14 | 12 | 18 | 15 | 11 | 14 |
| 149 | 32 | 35 | 36 | 35 | 34  | 172 | 7  | 6  | 6  | 7  | 8  | 6  | 40 | 12 | 10 | 10 | 13 | 8  | 53 | 16 | 16 | 18 | 15 | 14 | 19 |
| 150 | 36 | 37 | 35 | 31 | 33  | 172 | 8  | 5  | 5  | 5  | 5  | 4  | 36 | 12 | 11 | 12 | 12 | 10 | 57 | 15 | 14 | 17 | 16 | 11 | 13 |

Parmenter and

गोपनीय Confidential

[ ] कोड नं. Code No.

[ ] क्रम संख्या Serial No.

**MHS**

by :

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### निर्देश : (Instructions)

आपके दैनिक व्यवहार व परिस्थितियों से सम्बन्धित कुछ कथन दिये गये हैं। प्रत्येक कथन के पाँच विकल्प दिये गये हैं – अत्यधिक सहमत, सहमत, अनिश्चित, असहमत व अत्यधिक असहमत। जिस विकल्प को आप सही मानते हैं, उस पर सही का चिन्ह  लगा दें। इनमें कोई भी उत्तर सही या गलत नहीं है। मापनी का उद्देश्य केवल आपकी प्रतिक्रियाओं को जानना है।

आपके उत्तरों को पूर्णतया गुप्त रखा जायेगा। विना किसी संकोच के उत्तर दीजिये।

Some statements concerning your behaviour and circumstances are given. Each statement has five options-strongly agree, agree, uncertain, disagree, strongly disagree. Tick  the option that you consider right. None of these answers is right or wrong. The purpose of the measurement is just to know your responses.

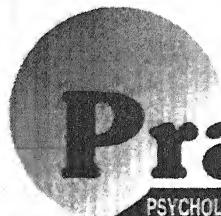
Your responses will be kept completely secret. Respond without any hitch.

कक्षा(Class)

आयु(Age)

लिंग(Sex)

विद्यालय(College)



**Prakhar**

PSYCHOLOGICAL TESTING & RESEARCH CENTRE

NEW PATEL NAGAR, (NEAR THADESHWARI MANDIR) ORAI-285001 (JALAU) U.P.

| अत्यधिक<br>सहमत   | सहमत  | अनिश्चित  | असहमत    | अत्यधिक<br>असहमत     |
|-------------------|-------|-----------|----------|----------------------|
| Strongly<br>agree | Agree | Uncertain | Disagree | Strongly<br>disagree |

1a. मैं अपने आपको पसन्द करता हूँ। I like myself.

|                          |                          |                          |                          |                          |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|

2b. मैं अच्छा मजाक करने वाला हूँ। I am good in jokes.

|                          |                          |                          |                          |                          |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|

3c. मैं विषम परिस्थितियों में भी अपने कर्तव्य को नहीं भूलता हूँ।

|                          |                          |                          |                          |                          |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|

I do not forget my duty even in adverse circumstances.

4d. मैं दुर्भाग्य का शिकार हूँ। I am a victim of misfortune.

|                          |                          |                          |                          |                          |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|

5e. मुझे ऐसा काम करने में भय नहीं लगता जिसकी समाज आलोचना करे। I am not afraid of doing what society may criticised.

|                          |                          |                          |                          |                          |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|

6a. मुझे बड़ा डर लगता है कि मैं अपनी पारिवारिक समस्याओं को कैसे सुलझाऊं ? I am very much afraid how to resolve my family problems.

|                          |                          |                          |                          |                          |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|

7b. मेरा कार्य बिल्कुल नीरस और उबाऊ है।

|                          |                          |                          |                          |                          |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|

My job is quite uninteresting and boring.

8c. मैं अपनी समस्या स्वयं सुलझा सकता हूँ।

|                          |                          |                          |                          |                          |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|

I can solve my problem myself.

9d. परिपक्व व्यक्ति होने के नाते मैं अपने सवेगों को प्रकट करने से रोकता हूँ। Being a mature person, I refrain from expressing my emotions.

|                          |                          |                          |                          |                          |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|

10e. मैं दूसरों के सुख की परवाह नहीं करता क्योंकि उनमें से अधिकांश मेरे सुख की परवाह नहीं करते।

|                          |                          |                          |                          |                          |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|

I do not care for other's happiness for most of them do not care for my happiness.

1a. मैं मात्र दूसरों की प्रसन्न करने के लिये विशेष प्रकार से व्यवहार नहीं करता हूँ। I do not behave in a special way just to please other's.

|                          |                          |                          |                          |                          |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| <input type="checkbox"/> |
|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|

| अत्यधिक<br>सहमत   | सहमत  | अनिश्चित  | असहमत    | अत्यधिक<br>असहमत     |
|-------------------|-------|-----------|----------|----------------------|
| Strongly<br>agree | Agree | Uncertain | Disagree | Strongly<br>disagree |

12b. मेरा परिवार बड़ा सुखी है। My family is very happy.

13c. मैं अपनी जिम्मेदारियों के प्रति चिन्तित रहता हूँ। I am worried about my responsibilities.

\* 14d. मुझे डर है कि मेरा निर्णय गलत हो सकता है। I am afraid my decision may be wrong.

\* 15e. मैं अकेला अनुभव करता हूँ। I feel lonely.

16a. मेरी राय में अधिक सम्पत्ति ही पूर्ण जीवन के लिये पर्याप्त नहीं है। In my opinion, much property alone is not for perfect life.

17b. मैं कभी-कभी बच्चों की तरह व्यवहार करता हूँ। जैसे- हँसना, खेलना, घूमना आदि। I sometime behave like children ; eg. laugh, play wander etc.

18 c. मैं कठिन परिस्थितियों में भी सरलता से निर्णय लेने की योग्यता रखता हूँ। I am capable of taking decision easily even in difficult situations.

\* 19d. मैं अक्सर मानसिक परेशानियों से ग्रस्त रहता हूँ। I am often a prey to mental troubles.

\* 20e. अधिकांश लोग स्वार्थी हैं और जब सम्भव हो आपसे लाभ उठाते हैं। Most people are selfish and when possible take advantage of you.

21a. मुझे यदि जन्म लेना होता तो मैं वही व्यक्ति होना पसन्द करता जो मैं हूँ। If I were to be born, I would like to be the person that I am.

22b. मन शान्त व आनन्दित बना रहे, इसका मैं सदैव ध्यान रखता हूँ। I always take care that mind should be calm & Joyful.

| आधिक<br>समर्पित<br>Strongly<br>agree | सहमत<br>Agree | अनिश्चित<br>Uncertain | असहमत<br>Disagree | अल्पाधिक<br>समर्पित<br>Strongly<br>disagree |
|--------------------------------------|---------------|-----------------------|-------------------|---|
|--------------------------------------|---------------|-----------------------|-------------------|---|

23c. मैं हमेशा समस्याओं से जूझने के लिये तत्पर रहता हूँ।        
I am always ready to struggle with problems.

\* 24d. मुझे जल्दी ही गुस्सा आ जाता है। I am short tempered.

\* 25e. मुझे अपरिचित लोगों से घुलने-मिलने में डर लगता है।        
I fear being intimate with strangers.

26a. मैं विषम परिस्थितियों में वास्तविकता से दूर रहते हुये कार्य        
करता हूँ। In adverse circumstances, I act keeping away from reality.

27b. चिन्ता व तनाव से दूर एक खुशहाल जीवन गुजारने का        
निरन्तर प्रयास करता हूँ। I always try to pass a happy life away from anxiety and stress.

28c. चुनौती व जिम्मेदारीपूर्ण कार्य करने में मुझे प्रसन्नता होती        
है। I find joy in doing work that is full of challenge and responsibility.

\* 29d. मैं कठिनाइयों से जूझने की अपेक्षा भाग जाना अधिक पसन्द        
करता हूँ। I prefer avoiding hardship to struggle with them.

30e. सामाजिक कल्याण सम्बन्धी कार्यों में मेरी रुचि है।        
I am interested in social welfare activities.

31a. मैं कठिन समय में भी तर्क के आधार पर कार्य करता हूँ।        
Even in hard time, I act on the basis of reason.

32b. कभी-कभी हास्य-विनोद की बातें करके हँसने-हँसाने का        
प्रयास करता हूँ। I sometimes try to indulge in humour and jokes to laugh and make others laugh.

\* 33c. विचारों तथा निर्णयों के लिये मैं आदत से दूसरों पर निर्भर हूँ।        
For thoughts and decisions, I habitually depend on others.

| अधिक<br>सहमत      | सहमत  | अनिश्चित  | असहमत    | अन्यथा<br>असहमत      |
|-------------------|-------|-----------|----------|----------------------|
| Strongly<br>agree | Agree | Uncertain | Disagree | Strongly<br>disagree |

\* 34d. असफलताओं के कारण मैं स्वयं को हीन समझने लगता हूँ।

On account of failure, I consider myself inferior.

35e. मैं सामुदायिक उत्तरदायित्व से सम्बन्धित कामों में आगे रहता हूँ।

I keep on the front in activities related to group responsibility.

36a. कभी-कभी न चाहते हुये भी वास्तविक तथ्यों के आधार पर

निर्णय लेता हूँ। Sometimes even unwillingly, I take decision on the basis of actual facts.

37b. आहार तथा व्यवहार को सन्तुलित रख लम्बी आयु प्राप्त

करने का प्रयास करता हूँ। I try to attain long life by stitching to balance diet and behaviour.

38c. मैं अन्तिम दौर में दूसरों की अपेक्षा खुद के निर्णयों पर

भरोसा करता हूँ। In the final round I trust my own decisions rather than those of others.

\* 39d. मैं जल्दी ही नर्वस हो जाता हूँ। I get nervous shortly.

40e. व्यक्तिगत कार्यों की अपेक्षा सामाजिक कार्यों को अधिक महत्व

देता हूँ। I give more importance to social work rather than personal work.

41a. पुराने अनुभवों के आधार पर अच्छी तरह सोच-विचारकर

निर्णय लेता हूँ। I take decisions after careful consideration on the basis of past experiences.

42b. व्यस्त होने पर भी प्रातः सैर करने और व्यायाम के लिये

समय देता हूँ। In spite of being busy, I spare time for morning walk and exercise.

43c. मैं स्वयं अपने भविष्य के निर्माण का प्रयास करता हूँ और

मुझे अपने पर विश्वास है। I myself try to shape my future and I trust myself.

|                   |       |           |          |                      |
|-------------------|-------|-----------|----------|----------------------|
| अत्यधिक<br>सहमत   | सहमत  | अनिश्चित  | असहमत    | अत्यधिक<br>असहमत     |
| Strongly<br>agree | Agree | Uncertain | Disagree | Strongly<br>disagree |

\* 44d. मैं प्रेम तथा सच्ची भावनाओं को पूरी तरह व्यक्त नहीं कर

पाता हूँ।

I cannot express fully love or sincere feelings.

45e. सामाजिक रिश्ते के परिवर्तित होने पर भी स्वयं को उसी

प्रकार परिवर्तित कर लेता हूँ। I adapt myself to the changes in social circumstances.

46a. मैं लोगों की आलोचना से डरता हूँ।

I am afraid of people's criticism.

47b. मुझे नीद अच्छी आती है। I get sound sleep.

\* 48c. मैं जल्दबाजी में निर्णय करता हूँ और बाद में पछताता हूँ।

I decide rashly and repent afterwards.

\* 49d. मेरी कमजोरियां जो दूसरों को पता हैं, मुझे परेशान करतीं

हैं। My weakness that are known to others, trouble me.

50e. मैं सामाजिक कार्यों के लिये आर्थिक मदद देने में कोई

कठिनाई अनुभव नहीं करता हूँ। I feel no difficulty in providing financial aid for social activities.

| AREAS        | SCORES | INTERPRETATION | REMARK |
|--------------|--------|----------------|--------|
| a. REA       |        |                |        |
| b. JFL       |        |                |        |
| c. AUT       |        |                |        |
| d. ES        |        |                |        |
| e. SM        |        |                |        |
| <b>TOTAL</b> |        |                |        |